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LIFE SYSTEMS INC CLEVELAND OH

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MAMMALIAN TOXICOLOGY TESTING: PROBLEM DEFINITION STUDY, GLOBAL —ETC(U)

MAR 81 R A WYNVEEN

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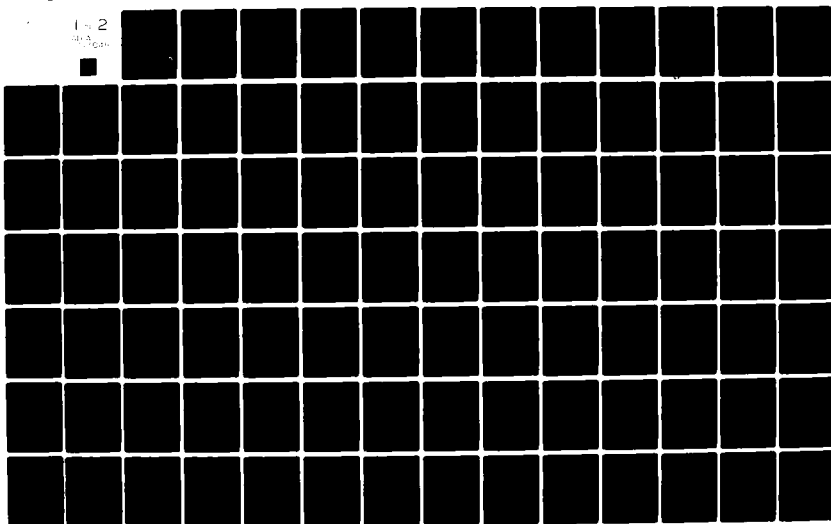
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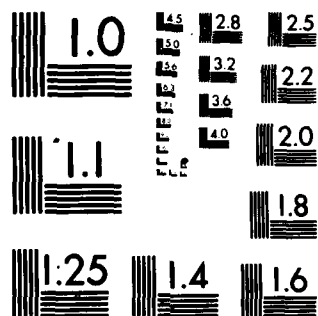
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LSI TR-477-31A

MAMMALIAN TOXICOLOGY TESTING: PROBLEM DEFINITION STUDY

GLOBAL ARMY TOXICOLOGY REQUIREMENTS (U)

by
R. A. Wynveen

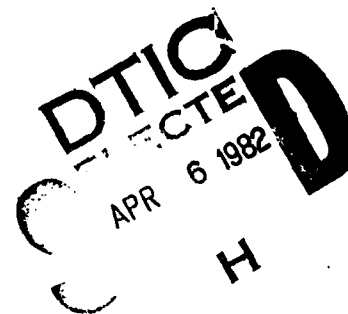
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Life Systems, Inc.
Cleveland, OH 44122



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A summary of an effort to identify the global Army's toxicology testing require- ments are presented in this report. The toxicology efforts included tasks before testing, actual testing, tasks carried out in parallel with testing and tasks completed after testing. Three major toxic hazard environments the Army addresses were identified. The results present the requirements when viewed from nine different levels of requirements detail.		

18. continued-

Report SubtitleLife Systems, Inc.
Report Number

Final Reports--

Part 1. Comparative Analysis Report
 Part 2. Facility Installation Report
 Part 3. Impact of Future Changes Report

LSI-TR-477-2
 LSI-TR-477-3
 LSI-TR-477-4

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FOREWORD

Reports for this Contract, DAMD17-81-C-1013, consist of three major final reports and twelve supporting documents. The Contract title, MAMMALIAN TOXICOLOGY TESTING: PROBLEM DEFINITION STUDY, is the main title for all the reports. Individual reports are subtitled and referenced with Life Systems, Inc. report numbers as detailed below. Please note that the Life Systems report numbers in test references are shortened. In the Defense Technical Information Center (DTIC) data base the reports are identified by the complete report numbers (i.e., LSI-TR-477-XXX) and complete numbers must be used for retrieval.

<u>Report Subtitle</u>	<u>Life Systems, Inc. Report Number</u>
Final Reports--	
Part 1. Comparative Analysis Report	LSI-TR-477-2
Part 2. Facility Installation Report	LSI-TR-477-3
Part 3. Impact of Future Changes Report	LSI-TR-477-4
Supporting Documents--	
Technology Changes Impact on Testing Requirements	LSI-TR-477-14
Quality Assurance Plan	LSI-TR-477-17A
Capability Modules	LSI-TR-477-19B
Technical Plan	LSI-TR-477-20A
Equipment Plan	LSI-TR-477-21A
Personnel Plan	LSI-TR-477-23A
Inhalation Chambers and Supporting Equipment Survey	LSI-TR-477-26A
Equipment List for Modules	LSI-TR-477-28B
AMTR Protocol/Pricing Report	LSI-TR-477-29A
Global Army Toxicology Requirements	LSI-TR-477-31A
Comparison Toxicology Test Costs	LSI-TR-477-36A
Annual Testing Capacity	LSI-TR-477-38A

SUMMARY

One of the most difficult tasks completed on a program to define the Army's Applied Mammalian Toxicology Research/Testing requirements was to find a method for presenting the full scope. Many toxic hazards exist in the military environment, from troop exposures to the industrial workers in Government-owned Plants and Army Depots.

Seven levels of requirements were identified. The broadest level was Global Department of Defense needs. The lowest level was that which the Medical Research and Command might add as increased capability at an existing Facility.

Of the multiple approaches for categorizing Global Army toxicology requirements, one was selected which divided the requirements into five categories: requirements related to aircraft, missiles, weapons and tracked combat vehicles, ammunition and other materiel.

Thirteen approaches were identified for screening to determine testing requirements. Thirty percent of these were utilized on the current program.

The resulting list of requirements was expressed through nine levels of detail. The requirements identified cannot be considered "complete" because the Army is a dynamic business.

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INTRODUCTION

The Problem Definition Study had as a task the identification of the Global Army's toxicology testing requirements. This was subsequently expanded so as to include applied toxicology research requirements, and later, as the program results dictated, the incorporation of toxicology requirements.

Toxicology, by program definition, includes:

1. Toxicology tasks done before testing
2. Actual toxicology testing
3. Toxicology tasks carried out in parallel with the testing
4. Toxicology tasks completed after the testing

The present document provides a central location for the itemization of the requirements identified.

TOXIC HAZARDS OF THE MILITARY ENVIRONMENT

There are three major toxic hazards environments the Army addresses:

1. Troop exposures associated with weapons systems (The Army's or the enemy's)
2. Industrial workers in Government-owned plants and Army depots
3. Environmental exposures of the general public to water, air and toxic wastes from Army activities

MULTIPLE REASONS FOR TOXICOLOGY REQUIREMENTS

Many reasons exist for Army toxicology requirements. They can be categorized into those:

1. Regulatory requirements
2. Non-regulatory requirements

Regulatory Requirements

The regulatory requirements impose actions upon the Army to comply with the laws and regulations and to demonstrate conformance to these same laws and regulations. They can require, for example, the need for testing to obtain permits and licenses; to manufacture or continue to manufacture chemicals; to carry out drug and vaccine development processes; etc.

Non-regulatory Requirements

The non-regulatory requirements are those that should be conducted as part of good business practices or ethically and morally. Other reasons include:

1. To prevent decrements of soldiers in battle
2. To reduce compensation payments

3. To reduce litigation costs and any associated settlements
4. To improve selection of materiel alternatives

TECHNOLOGY REQUIREMENTS

There are various requirement levels. They include:

1. Global Department of Defense needs
2. Global Army needs
3. The non-medical needs (e.g., DARCOM)
4. The medical needs (e.g., The Surgeon General's responsibility)
5. MRDC's responsibility
6. MRDC's perceived responsibility
7. MRDC's added capability in a new facility (such as a mammalian toxicology research/testing facility at such a model site as LAIR or Hunters Point)

The current document focuses on the Global Army requirements including toxicology tasks before-testing through after-testing activities.

APPROACH TO REQUIREMENTS

Multiple approaches are available for identifying Army requirements. Table 1 presents a summary of some of the techniques available. Note, no one technique will identify all the requirements.

Table 2 presents a list of some of the approaches utilized for identifying the Global Army requirements during the three-month time frame of the current study.

A master list of Global Army toxicology requirements has been assembled. It has been divided into five categories:

1. Aircraft (& Related Equipment)
2. Missiles (& Related Equipment)
3. Weapons and Tracked Combat Vehicles (& Related Equipment)
4. Ammunition (& Related Materiel)
5. Other Materiel

This is the best known accumulation of toxicology testing requirements. It resulted from the incorporation of information acquired through the Congressional budget approval process, MRDC's long range plans, a prior review of toxicology requirements completed by MRDC staff officers and various other inputs utilizing a spot-sampling technique.

RESULTS

Appendix 1 contains the generated list of requirements categories broken down into nine different levels (See also Figure 1). The number of each Appendix 1 page reflects the level being addressed (e.g., L5-2 means the second page of the Level 5 Requirements Categories).

TABLE 1 MANY APPROACHES FOR IDENTIFICATION OF REQUIREMENTS

ONE TECHNIQUE WILL NEVER IDENTIFY ALL THE REQUIREMENTS. TO DO IT THOROUGHLY REQUIRES MANY APPROACHES

No.	Approach	What Will Identify?	What Will Miss?	Price		Assump- tions?
				Cost?	Time?	
1	Top Down	RDT&E and Procurement	Inventory, Existing Plants	Med.	Long	
2	Bottom Up	Specific Cases	Little	High	Long	
3	Spot Sampling	Specific Cases	Most	Low	Short	
4	Random Sampling	Percentage	Percentage	Med.	Med.	
5	Talking to PMs	50 Majors	1000's Minor, Uses	Low	Med.	
6	Life Cycle Segmenting	Less Obvious	Little	High	Long	
7	Legalistic	Regulator	Non-regulator, What's in lab.	Med.	Med.	
8	Manufacturing Process Review	Startling, Intermediate Final & By Products	Applications, Uses	Med.	Med.	
9	More of Same (Testing)	Nothing New	New Needs, Unexpected	Low	Low	
10	Squeaking Wheel	One Probable	All Others	Low	Short	
11	Forecasting Changes	New Issues	Existing Issues	Med.	Low	
12	Questionnaires	Known & Some Unknowns	Hard to Find	Low	Med.	
13	Life Cycle Network	New Materiel	Inventory	Med.	Long	

TABLE 2 SCOPE AND APPROACHES TO REQUIREMENTS DEFINITION

1.0 DA Breakdown of Budget Authority (3 years, 79-81)

2.0 DA Procurement (4 years, 79-82)

2.1 Categories

- a. Aircraft
- b. Missiles
- c. Weapons and Tactical Combat Vehicles
- d. Ammunition
- e. Others

2.2 Types Within Categories (e.g., aircraft includes fixed wing and helicopters)

2.2.1 Specific Weapon Systems Within Types of Categories (mark major ones with *, i.e., ones with PMs)

3.0 RDT&E (4 years, 79-82)

3.1 Budget Activity

- a. Technology Base
- b. Advanced Technology Development
- c. Strategic Weapons
- d. Tactical Programs
- e. Intelligence and Communications
- f. Defense Wide Mission Support

3.2 R&D Categories

- a. 6.1 Research
- b. 6.2 Exploratory Development
- c. 6.3 Advanced Development
- d. 6.4 Engineering Development
- e. 6.5 Management and Support
- f. 6.6 Operational Systems Development

3.2.1 Specific Ones Related to AMTR/T (needs more effort - next phase)

4.0 Functional Areas (1 thru 19)

5.0 MRDC

5.1 RHR Report (MRDC Limited)

- a. Mission Areas (I, II, III, IV, Not Assigned)
- b. Categories (A, B & C)
- c. Priority Assigned

continued-

Table 2 - continued

- 5.2 Long Range Plans (MRDC Limited), Mission Assigned
 - a. Mission Areas I, III, IV (II and V not provided)
 - b. Deficiencies
- 5.3 Current/Past Programs (1498s)
- 6.0 Search of the Army's requirements data bases: CARDS, STOGS (didn't get OCO, STO, LOA, QAP, ROC, AP, LR, QCR, TDR and associated information)
- 7.0 Senate & House Committee Hearings, 1981
- 8.0 Project/Product Managers List
- 9.0 Isolated Situations (Army R,D&A Magazine Search -- R & D being done)
 - 9.1 Synthetic Fuels Program (Army Fuel Policy, AR 703.1, MERARCOM, Lead Agency, Maurice Lepera)
 - 9.2 Toxic and Hazardous Materials Agency (Col. John D. Spencer)
 - 9.3 Chemical Protective Respirator, Modular Collective Protective Equipment (ARRADCOM's CSL); (Decontaminating Apparatus, Dr. John Kurtz; Training Device, Mr. T.L. Strozyk); Chemical Decontamination (e.g., jet exhaust) (ARRADCOM, Dr. Joseph Epstein, CSL; Mr. James Gailbrosis)
 - 9.4 Chemical Protective Clothing (NARADCOM, Dr. Malcolm Henry, Col. Robert J. Cuthbertson)
 - 9.5 Food Research (NARADCOM)
 - 9.6 Chemical Demilitarization (unserviceable and obsolete chemical agents and munitions, etc.)
 - 9.7 Installation Restoration (containment and treatment at arsenals, manufacturing plants)
- 10.0 Specific AMTR/T Being Done by Others
 - a. MRDC
 - b. CSL
 - c. AEHA

continued-

Table 2 - continued

11.0 Specific Chemicals/List

- a. Army Unique (e.g., SRI reports)
- b. Referenced by AEHA and Others
- c. Society of Toxicology -- What Toxicology Testing Laboratories are Working On (1975) (i.e., type of industries, types of chemicals, types of animals, routes of exposure and supporting services.)
- d. MRDC's 1498s
- e. NTP

12.0 General Categories

- a. Readily available, got and evaluated
- b. Decided what was needed and requested
- c. Project/Product Managers Summary Sheets
- d. Technology Coordinating Paper (Medicine & Biological Sciences)
- e. Project/Program Listing
- f. Army Weapon Systems
- g. 1980-81 Green Book -- Army Magazine
- h. Equipping The Army of the Eighties
- i. Army Equipment Plan for the 1990's

CROSS SECTION OF REQUIREMENTS "MINE"

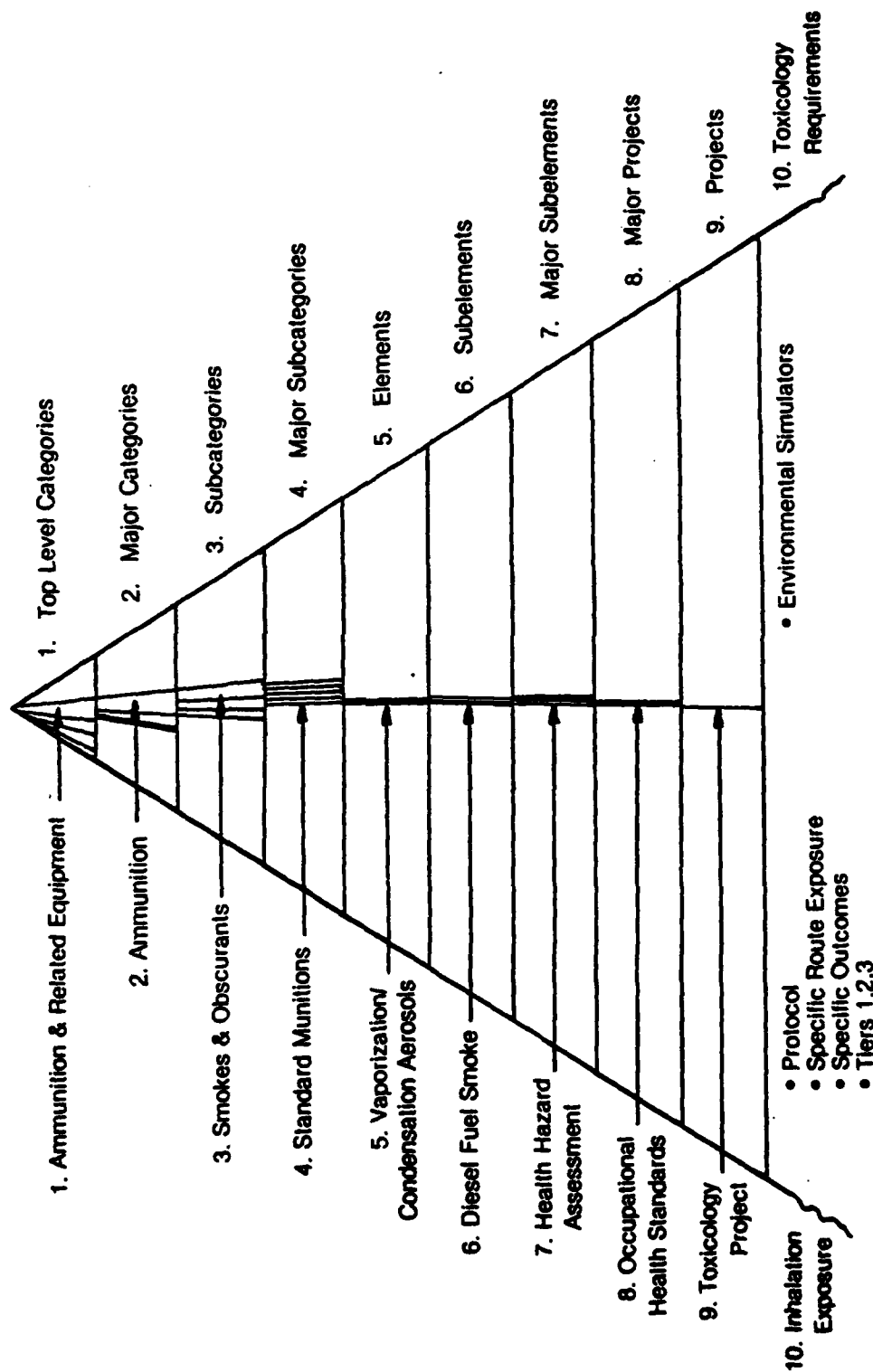


FIGURE 1

It is recognized that considerable improvement in specific toxicology requirement identification can be made expanding upon the methodologies used to arrive at the list at its current level of completeness. It is estimated this completeness is approximately 10%. The format for incorporation of the additional requirements is complete to approximately 80%.

CONCLUSIONS

A list of Army requirements has been started. It will never be "complete" because of the dynamics of the Army's business. Requirement identification is a key to toxicology decision making.

APPENDIX 1

NINE LEVELS OF TOXICOLOGY REQUIREMENTS

	<u>Page No.</u> (a)
Level 1	13
Level 2	14
Level 3	15
Level 4	19
Level 5	26
Level 6	36
Level 7	49
Level 8	67
Level 9	93

(a) Each level is also given a separate "page" number to aid in reviewing; for example, page 28 is also "numbered" L5-3 to reflect it is the third page of Level 5.

REQUIREMENTS CATEGORIES (LEVEL 1)

Aircraft (& Related Equipment)

Missiles (& Related Equipment)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Ammunition (& Related Materiel)

Other Materiel

REQUIREMENTS CATEGORIES (LEVEL 2)

Aircraft (& Related Equipment)

- Fixed Wing
- Helicopter
- Technology Base

Missiles (& Related Equipment)

- Surface-to-Air
- Air-to-Surface
- Surface-to-Surface
- Antitank/Assault
- Technology Base

Weapons and Tracked Combat Vehicles (& Related Equipment)

- Weapons/Other Vehicles
- Tracked Combat Vehicles
- Air-Defense Gun Carrier
- Self-Propelled Artillery
- Armored Command Post Vehicle
- Armored Recovery Vehicles
- Armored Personnel Carriers
- Armored Reconnaissance Vehicles
- Armored Cargo Carriers
- Armored Combat Engineer Vehicles
- Armored Missile Carrier
- Fighting Vehicle System (IFV-CFV-FUS) (64616A)
- Infantry Fighting Vehicle (IFV) (64616A)
- Calvary Fighting Vehicle (CFV) (64629A)
- Technology/Base

Ammunition (& Related Materiel)

- Ammunition
- Technology Base

Other Materiel

- Tactical & Support Vehicles
- Communications & Electronics
- Other

REQUIREMENTS CATEGORIES (LEVEL 3)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter ^(b) (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

Propulsion Technology (62209A)
Aircraft Power Plants/Propulsion (63201A)
Air Mobility Support (63209A)
Air Mobility Support Equipment (64204A)
Army Helicopter Improvement Program (64220A)
Safety

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C	Chaparral	Forward Air-Defense Missile (23730A)
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile
----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)

Air-to-Surface

----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade ^(d)	(64313A)
----	LCSS	

continued-

Level 3 - continued

Surface-to-Surface
Antitank/Assault

FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket

Technology Base

Propulsion
Safety & Survivability
M72 Coperhead Cannon-Launched Guided Projectile (64621A)
XM736 ---- Binary Projectile
High Energy Laser Research (62303A)
High Energy Laser Research (62307A)
High Energy Laser Components (63314A)
Heavy Antitank/Assault Weapon - TOW (23724A)
Corp Support Weapon System (63320A)
Nuclear Munitions and Radiacs (63604A)
Anti-Tank Guided Missiles Improvement
Ground Support Rocket System (GSRS)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Weapons/Other Vehicles

Mobile Weapons/Other Vehicles
Portable Weapons/Ordnance
Technology Base

Tracked Combat Vehicles

Main Battle Tanks
Air-Defense Gun Carrier
Self-Propelled Artillery
Armored Command Post Vehicle
Armored Recovery Vehicles
Armored Personnel Carriers
Armored Reconnaissance Vehicles
Armored Cargo Carriers
Armored Combat Engineer Vehicles
Armored Missile Carrier
Fighting Vehicle System (IFV-CFV-FUS) (64616A)
Infantry Fighting Vehicle (IFV) (64616A)
Calvary Fighting Vehicle (CFV) (64629A)

Technology/Base

Tank and Automotive Survivability Technology (62601A)
Artillery Armament Systems (62603A)

continued-

Level 3 - continued

Advanced Artillery System Test Beds (62603A)
Munitions Technology (62603A)
Training Munitions (62603A)
Chemical Munitions (62622A)
Advanced Land Mobility System Concepts (63602A)
Combat Vehicle Propulsion System (63621A)
Advanced Diesel Engine (63626A)
High Mobility MP Wheeled Vehicle (64624A)
Fire Support Team (FIST) Vehicle (64626A)
---- HSTV-L High-Survivability Test Vehicle - Lightweight
---- HIGAM High Mobility/Agility Combat Test Vehicle
---- OSRS General Support Rocket System

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)
Smokes & Obscurants
Atomic Material
Controlled Mines
Miscellaneous

Technology Base

Field Artillery Ammunition Development (63628A)
Tank Ammunition Development (63633A)
Explosives
Smokes & Obscurants
Projectiles
Chemical & Biological Warfare

Ammunition Production Base Support

Achieve Cost Reductions and Enhance Health Safety and Energy
Conservation Characteristics
Provisions for Industrial Facilities Binary Chemical Munitions
Layaway of Industrial Facilities
Manufacturing Technology Program
Military Adaption of Commercial Items
Ammo Depot Plant Equipment Maintenance

Other Materiel

Tactical & Support Vehicles

Trucks
Semi-trailers
Trailers of all Types

Communications & Electronics

Fixed
Semi-fixed
Mobile Strategic Communications
Mobile Tactical Communications

continued-

Level 3 - continued

Other

- Fuels Handling Equipment System (64717A)
- Fuels, Lubricants, Additives
- Clothing, Equipment, Shelters
- Clothing Soaps, Dyes
- Food
- Water & Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
- Preservatives
- Stain Release Agents
- Medical/Dental Materiel and Technology
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
- Other Support Equipment

REQUIREMENTS CATEGORIES (LEVEL 4)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)
- Safety
 - Air Worthiness

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C	Chaparral	Forward Air-Defense Missile (23730A)
	Rocket	
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile
----	Vulcan	Air-Defense Gun

continued-

Level 4 - continued

----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade	(64313A)
----	LCSS	
Surface-to-Surface		
Antitank/Assault		
FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket
Technology Base		
Propulsion		
Solid Rocket Fuel System Propellants		
Aeronautical Propulsion Technology (62303A)		
Safety & Survivability		
M72	Coperhead	Cannon-Launched Guided Projectile (64621A)
XM736	----	Binary Projectile
High Energy Laser Research (62303A)		
High Energy Laser Research (62307A)		
High Energy Laser Components (63314A)		
Heavy Antitank/Assault Weapon - TOW (23724A)		
Corp Support Weapon System (63320A)		
Nuclear Munitions and Radiacs (63604A)		
Nuclear Effects Support Team (D153)		
Anti-Tank Guided Missiles Improvement		
ATGM Improvements (D097)		
Ground Support Rocket System (GSRS)		
Weapons and Tracked Combat Vehicles (& Related Equipment)		
Weapons/Other Vehicles		
Mobile Weapons/Other Vehicles		
Mobile Weapons		
Other Vehicles		
Portable Weapons/Ordnance		
Technology Base		
Tracked Combat Vehicles		
Main Battle Tanks		
M1	Abrams	Combat (Main Battle) Tank (105MM) (64620A)
M1	Tank Improvements Program (23735A)	

continued-

Level 4 - continued

M4A3		
M24 (Light)		
M26		
M41,A1,A2,A3		
M48,A1,A2,A2C,A3C	----	Main Battle Tank
M60,A1,A1E2,A2,A3	----	Main Battle Tank (105MM)
M60A1	Product Improvement Program (23735A)	
M64,A1		
M103,A1		
MBT-70		
XM-70		
XM803		
Air-Defense Gun Carrier		
M741	----	Armored Air-Defense Gun Carrier (Vulcan)
Self-Propelled Artillery		
Armored Command Post Vehicle		
M557A1	----	Armored Command Post Vehicle
Armored Recovery Vehicles		
M32,A1B3		
M51		
M88A1	----	Medium Recovery Vehicle
M578		
XM696 (M548)		
Armored Personnel Carriers		
M59		
M75		
M113,A1,A2	----	Armored Personnel Carrier
M125,A1		
XM 163		
XM 667E1		
XM668E1		
XM727		
XM730		
XM741		
XM754		
XM765		
Armored Reconnaissance Vehicles		
M114A1		
M551	Sheridan	Armored Reconnaissance Vehicle
XM800		
Armored Cargo Carriers		
M548	----	Armored Cargo Carrier/SLUFAC Launcher
Armored Combat Engineer Vehicles		
M728		
Armored Missile Carrier		
M667	----	Armored Lance Missile Carrier
M727	----	Armored Hawk Missile Carrier
M730	----	Armored Chaparral Missile Carrier
M901	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System

continued-

Level 4 - continued

Fighting Vehicle System (IFV-CFV-FUS) (64616A)
Infantry Fighting Vehicle (IFV) (64616A)
 M2 IFV Armored Infantry Fighting Vehicle
Calvary Fighting Vehicle (CFV) (64629A)
 M3 CFV Armored Calvary Fighting Vehicle

Technology/Base

Tank and Automotive Survivability Technology (62601A)
Artillery Armament Systems (62603A)
Advanced Artillery System Test Beds (62603A)
Munitions Technology (62603A)
Training Munitions (62603A)
Chemical Munitions (62622A)
Advanced Land Mobility System Concepts (63602A)
 Combat Vehicle Technology (D118)
 High Survivability Test Vehicle (D188)
Combat Vehicle Propulsion System (63621A)
 Combat Vehicle Engine (D607)
Advanced Diesel Engine (63626A)
High Mobility MP Wheeled Vehicle (64624A)
Fire Support Team (FIST) Vehicle (64626A)
---- HSTV-L High-Survivability Test Vehicle - Lightweight
---- HIGAM High Mobility/Agility Combat Test Vehicle
---- OSRS General Support Rocket System

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)
 Tank Ammunition
 Fuses (over 1,100 types)
 Artillery Ammunition
 Propelling Charges
 Small Arms Ammunition
 Mortar Ammunition
 Rockets
 Other
 Renovation
 Proveout
Smokes & Obscurants
 Infantry Support Systems (64601A)
 Standard Munitions
 Vaporization/Condensation Aerosols
 Marking/Signaling Smokes
 Training Smokes
Atomic Material
Controlled Items
Miscellaneous

Technology Base

Field Artillery Ammunition Development (63628A)
Field Artillery Ammunition Development (D007)
Improved Conventional Ammunition (D276)

continued-

Level 4 - continued

Tank Ammunition Development (63633A)
Tank Ammunition and Fuses (D161)

Explosives

Primers
Pyrotechnics
Fuses
Fuse Components
Cartridge Cases

Smokes & Obscurants

Combat Support Munitions (63627A)
Training Smokes
Large Area Screening (LAS)
Infrared (IR) Screening
Microwave Screening
Multispectral Screening (MSS)
Millimeter Wave Screening
"One Way" Smokes

Projectiles

XM11 Projectile (SPAL)
Chemical & Biological Warfare
Chemical Warfare (Offense)
Chemical Warfare (Defense)
Biological Warfare (Defense)
Radiological Defense Equipment (64706A)

Ammunition Production Base Support

Achieve Cost Reductions and Enhance Health Safety and Energy

Conservation Characteristics

Active Production Support
Modernization Support
Expansion Support
New Production Capability Support

Provisions for Industrial Facilities Binary Chemical Munitions

Layaway of Industrial Facilities

Manufacturing Technology Program

Pollution Engineering for 1983-85 Requirements (5794214)
Process Parameters for Prod Forming of Projectiles (5796681)
Improved Nitrocellulose Purification Process (5804341)
Nitroguanidine Process Optimization (5814061)

Others

Military Adaption of Commercial Items

Ammo Depot Plant Equipment Maintenance

Industrial Emissions (Munition Plants)

Other Materiel

Tactical & Support Vehicles

Trucks

Semi-trailers

Trailers of all Types

continued-

Level 4 - continued

Communications & Electronics

- Fixed
- Semi-fixed
- Mobile Strategic Communications
- Mobile Tactical Communications

Other

- Fuels Handling Equipment System (64717A)
- Fuels, Lubricants, Additives
 - Fuels and Equipment (63104A)
 - Lubricants
 - Additives
 - Brake Fluids
- Clothing, Equipment, Shelters
 - Clothing and Equipment Technology (62723A)
 - Shelters (62723A)
 - Clothing and Equipment (Support/Survivability) (63747A)
 - Combat Clothing and Equipment (64713A)
- Clothing Soaps, Dyes
 - Clothing
 - Soaps, Detergents Cosmetics
 - Dyes
 - Oil Repellents
 - Water Repellents
 - Sleeping Bags
- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
 - Pesticides
 - Fungicides
 - Rodenticides
 - Herbicides
- Preservatives
 - Leather
 - Wood
 - Structural
- Stain Release Agents
 - Military Clothing
- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)

continued-

Level 4 - continued

- Drugs, Vaccines, Repellents
- Medical/Dental Device
- Chemical Warfare (Defense)
- Basic Toxicology Research
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Installation Effluents
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - TRADOC Studies & Analyses (65102A)
 - Support of Development Testing (65702A)
 - Materiel Systems Analysis (65706A)
 - Exploitation of Foreign Items (65709A)
 - Support of Operational Testing (65712A)
 - Foreign Weapons Evaluation (65714A)
 - Program-Wide Activities (65801A)
 - DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
- Other Support Equipment
 - Combat Support Equipment (63726A)
 - Combat Support Equipment
 - Tactical Bridging
 - Shop Sets
 - Construction Equipment
 - Floating & Rail Equipment
 - Generators & Associated Equipment
 - Material Handling Equipment
 - Medical Support Equipment
 - Special Equipment
 - Support Equipment Facilities
 - Military Policy
 - Material

REQUIREMENTS CATEGORIES (LEVEL 5)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)

Safety

- Air Worthiness
 - Mid-air collision

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C Chaparral		Forward Air-Defense Missile (23730A)
	Rocket	
	Motor	
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile

continued-

Level 5 - continued

----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade	(64313A)
----	LCSS	
Surface-to-Surface		
Antitank/Assault		
FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket

Technology Base

Propulsion

Solid Rocket Fuel System Propellants

Aeronautical Propulsion Technology (62303A)

New Propellants

Propellant Mixtures

Safety & Survivability

M72 Coperhead Cannon-Launched Guided Projectile (64621A)

XM736 ---- Binary Projectile

High Energy Laser Research (62303A)

High Energy Laser Research (62307A)

High Energy Laser Components (63314A)

Heavy Antitank/Assault Weapon - TOW (23724A)

Corp Support Weapon System (63320A)

Nuclear Munitions and Radiacs (63604A)

Nuclear Effects Support Team (D153)

Anti-Tank Guided Missiles Improvement

ATGM Improvements (D097)

Ground Support Rocket System (GSRS)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Weapons/Other Vehicles

Mobile Weapons/Other Vehicles

Mobile Weapons

Self-Propelled

Towed

Other Weapons

continued-

Level 5 - continued

Other Vehicles

Bulldozer, Armored Vehicle
Car, Armored Vehicle
Cargo, Armored Vehicle
Tractor, Armored Vehicle
Utility Armored Vehicle
Vehicle Launched Bridge, Armored Vehicle
Ammo Support Vehicle
Other Combat Vehicles

Portable Weapons/Ordnance

Technology Base

Tracked Combat Vehicles

Main Battle Tanks

M1 Abrams Combat (Main Battle) Tank (105MM) (64620A)
M1 Tank Improvements Program (23735A)
M4A3
M24 (Light)
M26
M41, A1, A2, A3
M48, A1, A2, A2C, A3C ---- Main Battle Tank
M60, A1, A1E2, A2, A3 ---- Main Battle Tank (105MM)
M60A1 Product Improvement Program (23735A)
M64, A1
M103, A1
MBT-70
XM-70
XM803

Air-Defense Gun Carrier

M741 ---- Armored Air-Defense Gun Carrier (Vulcan)

Self-Propelled Artillery

Armored Command Post Vehicle

M557A1 ---- Armored Command Post Vehicle

Armored Recovery Vehicles

M32, A1B3
M51
M88A1 ---- Medium Recovery Vehicle
M578
XM696 (M548)

Armored Personnel Carriers

M59
M75
M113, A1, A2 ---- Armored Personnel Carrier
M125, A1
XM 163
XM 667E1
XM668E1
XM727
XM730

continued-

Level 5 - continued

XM741		
XM754		
XM765		
Armored Reconnaissance Vehicles		
M114A1		
M551	Sheridan	Armored Reconnaissance Vehicle
XM800		
Armored Cargo Carriers		
M548	----	Armored Cargo Carrier/SLUFAE Launcher
Armored Combat Engineer Vehicles		
M728		
Armored Missile Carrier		
M667	----	Armored Lance Missile Carrier
M727	----	Armored Hawk Missile Carrier
M730	----	Armored Chaparral Missile Carrier
M901	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System
Fighting Vehicle System (IFV-CFV-FUS) (64616A)		
Infantry Fighting Vehicle (IFV) (64616A)		
M2	IFV	Armored Infantry Fighting Vehicle
Calvary Fighting Vehicle (CFV) (64629A)		
M3	CFV	Armored Calvary Fighting Vehicle
Technology/Base		
Tank and Automotive Survivability Technology (62601A)		
Artillery Armament Systems (62603A)		
Advanced Artillery System Test Beds (62603A)		
Munitions Technology (62603A)		
Training Munitions (62603A)		
Chemical Munitions (62622A)		
Advanced Land Mobility System Concepts (63602A)		
Combat Vehicle Technology (D118)		
High Survivability Test Vehicle (D188)		
Combat Vehicle Propulsion System (63621A)		
Combat Vehicle Engine (D607)		
Advanced Diesel Engine (63626A)		
High Mobility MP Wheeled Vehicle (64624A)		
Fire Support Team (FIST) Vehicle (64626A)		
----	HSTV-L	High-Survivability Test Vehicle - Lightweight
----	HIGAM	High Mobility/Agility Combat Test Vehicle
----	OSRS	General Support Rocket System

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)

Tank Ammunition
 Fuses (over 1,100 types)
 M734 Multi-option Fuse
 Artillery Ammunition
 Propelling Charges

continued-

Level 5 - continued

- Small Arms Ammunition
- Mortar Ammunition
- Rockets
- Other
 - Munition Related Chemicals
- Renovation
- Proveout
- Smokes & Obscurants
 - Infantry Support Systems (64601A)
 - Smoke Mortar Rounds (D144)
 - Standard Munitions
 - Hexachloroethane (HC) Smoke Mixture (Zinc Oxide and Red Phosphorus - Butyl Rubber (RP-BR) Smoke (L8A1 Smoke Grenades), (Oiled Red Phosphorus, Methylene Chloride, White Phosphorus)
 - White Phosphorus - Felt Wedge (WP-FW) Smoke (XM825 Smoke Grenades/Projectiles)
 - Vaporization/Condensation Aerosols
 - Fog Oil Smoke (use only)
 - Diesel Fuel Smoke (use only)
 - Marking/Signaling Smokes
 - Green Smoke
 - Red Smoke
 - Yellow Smoke
 - Violet Smoke
 - Other Colored Smokes
 - Training Smokes
- Atomic Material
- Controlled Items
- Miscellaneous
- Technology Base
 - Field Artillery Ammunition Development (63628A)
 - Field Artillery Ammunition Development (D007)
 - Improved Conventional Ammunition (D276)
 - Tank Ammunition Development (63633A)
 - Tank Ammunition and Fuses (D161)
- Explosives
 - Primers
 - Pyrotechnics
 - Blastic Agents
 - Fuses
 - Advanced Fuse Design (63613A)
 - Fuse Components
 - Cartridge Cases
 - M205E1 152MM Skin Sensitizing Potential
- Smokes & Obscurants
 - Combat Support Munitions (63627A)
 - Smoke Munitions and Material (DE82)
 - Training Smokes

continued-

Level 5 - continued

- Large Area Screening (LAS)
- Infrared (IR) Screening
- Microwave Screening
- Multispectral Screening (MSS)
- Millimeter Wave Screening
- "One Way" Smokes
- Projectiles
 - XM11 Projectile (SPAL)
- Chemical & Biological Warfare
 - Chemical Warfare (Offense)
 - Lethal Chemical Munitions Concepts
 - Lethal Chemical Munitions (64610A)
 - Chemical Protective Respirator
 - Modular Collective Protective Equipment
 - Decontaminating Equipment
 - Training Devices
 - Chemical Agent Detector
 - Binary CW Agents
 - Chemical Agents
 - Chemical Warfare (Defense)
 - Chemical Defense Materiel Concepts (63721A)
 - Chemical Defense Materiel (64725A)
 - Medical Aspects
 - Treatment
 - Simulant
 - Biological Warfare (Defense)
 - Rapid ID of Agents/Diseases
 - Rapid Diagnosis Agents/Diseases
 - Biological Defense Materiel (64724A)
 - Radiological Defense Equipment (64706A)
- Ammunition Production Base Support
 - Achieve Cost Reductions and Enhance Health Safety and Energy
 - Conservation Characteristics
 - Active Production Support
 - Modernization Support
 - Radford AAP Restore Nitrocellulose Line C
 - Pine Bluff Arsenal
 - Indiana AAP
 - Expansion Support
 - New Production Capability Support
 - New 155MM Propelling Charge, Indiana AAP
 - 25 MM Bushmaster Ammunition, Lake City AAP
 - Metal Parts 105MM Tank Training Projectile, Indiana AAP
 - M483 Improved Conventional Munition, Mississippi AAP, Bay St Louis, MS
 - Provisions for Industrial Facilities Binary Chemical Munitions
 - Layaway of Industrial Facilities
 - Manufacturing Technology Program

continued-

Level 5 - continued

- Pollution Engineering for 1983-85 Requirements (5794214)
- Process Parameters for Prod Forming of Projectiles (5796681)
- Improved Nitrocellulose Purification Process (5804341)
- Nitroguanidine Process Optimization (5814061)
- Others
 - Military Adaption of Commercial Items
 - Ammo Depot Plant Equipment Maintenance
 - Industrial Emissions (Munition Plants)

Other Materiel

- Tactical & Support Vehicles
 - Trucks
 - Semi-trailers
 - Trailers of all Types
- Communications & Electronics
 - Fixed
 - Semi-fixed
 - Mobile Strategic Communications
 - Mobile Tactical Communications

Other

- Fuels Handling Equipment System (64717A)
- Fuels, Lubricants, Additives
 - Fuels and Equipment (63104A)
 - Synthetic Fuels & Alternative Fuels
 - High Fuels Technology
 - Lubricants
 - Additives
 - Fire Control Technology
 - Icing Inhibitors
 - Anti-oxidants
 - Corrosion Inhibitors
 - Lubricity Additives
 - Biocides
 - Static Dissipator Additives
 - Brake Fluids
 - Silicone Brake Fluids
- Clothing, Equipment, Shelters
 - Clothing and Equipment Technology (62723A)
 - Shelters (62723A)
 - Clothing and Equipment (Support/Survivability) (63747A)
 - Combat Clothing and Equipment (64713A)
- Clothing Soaps, Dyes
 - Clothing
 - Material
 - Face Nets
 - Arctic Clothing
 - Helmets
 - Body Armor
 - Spectacles

continued-

Level 5 - continued

- Gloves
- Coveralls
- Goggles
- Masks
- Shoes
- Socks
- Soaps, Detergents Cosmetics
 - Soaps
 - Detergents
 - Cosmetics
- Dyes
- Oil Repellents
- Water Repellents
 - Clothing
 - Leatherwear
- Sleeping Bags
 - Batting
 - Polyester
- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Water Quality Criteria (Field Army)
 - Water Supply Equipment Family
 - Reverse Osmosis Water Purification Unit
 - Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
 - Pesticides
 - New Chemicals
 - Disposal Unit
 - Fungicides
 - Mattress Batting
 - Fire Retardant Resins
 - Tick & Flea Collars
 - Rodenticides
 - New Chemicals
 - Disposal Unit
 - Herbicides
- Preservatives
 - Leather
 - Paranitrophenol (DARCOM)
 - Wood
 - Structural
- Stain Release Agents
 - Military Clothing
 - Sun Chemical

continued-

Level 5 - continued

- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Materiel (A836)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)
 - Drugs, Vaccines, Repellents
 - Drugs and Vaccines Developments (63750A)
 - Military Disease Hazards Technology (62770A)
 - Combat Casualty Treatment Technology (627724)
 - Systems Health Prevention Technology (62777A)
 - Repellents
- Medical/Dental Device
 - Medical Devices
 - Dental Devices
- Chemical Warfare (Defense)
 - Prophylaxis Drugs
 - Defense System CW/BW Research (61102A)
 - Chemical/Biological Defense Investigations (62706A)
 - Medical Defense Against Chemical Weapons (62734A)
- Basic Toxicology Research
 - Extrapolation of Data
 - Other
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Training Exercises
 - Pollution Abatement Process Technology Research (61102A)
 - Installation Effluents
 - Army Posts
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - Army Ammunition Plant (MBRDL)
 - Identification of Health Effects of Mil. Pollutants (A835)
 - Environmental Quality of Construction and Operation (A896)
 - Environmental Quality R&D (D048)
- TRADOC Studies & Analyses (65102A)
 - TRADOC Studies & Analyses (M980)
- Support of Development Testing (65702A)
 - Test Design & Evaluation (D026)
 - Field Smoke Assessment (D204)
 - Aircraft Development Test Activity (D618)
- Materiel Systems Analysis (65706A)
 - US Army Materiel Systems Analysis (M541)
- Exploitation of Foreign Items (65709A)
 - Exploitation of Foreign Items (D650)
- Support of Operational Testing (65712A)
 - Test Boards (DV02)
 - Evaluation of Materiel Concepts (D985)

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Level 5 - continued

- Foreign Weapons Evaluation (65714A)
- Program-Wide Activities (65801A)
- DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
 - DOD Munitions Effectiveness (D620)
 - Explosive Safety Standards (M857)
- Other Support Equipment
 - Combat Support Equipment (63726A)
 - General Support Equipment (DK39)
 - Combat Support Equipment
 - Tactical Bridging
 - Shop Sets
 - Construction Equipment
 - Floating & Rail Equipment
 - Generators & Associated Equipment
 - Material Handling Equipment
 - Medical Support Equipment
 - Special Equipment
 - User Testing
 - Nonsystem Training Devices
 - Support Equipment Facilities
 - Military Policy
 - Riot Control Agents
 - Material
 - Military Inventory
 - Others

REQUIREMENTS CATEGORIES (LEVEL 6)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)

Safety

- Air Worthiness
 - Mid-air collision
 - Carbon Fiber Exposure

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C Chaparral		Forward Air-Defense Missile (23730A)
Rocket		
Motor		
	Smokeless Propellant System	
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)

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Level 6 - continued

----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile
----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade	(64313A)
----	LCSS	
Surface-to-Surface		
Antitank/Assault		
FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket
Technology Base		
Propulsion		
Solid Rocket Fuel System Propellants		
Aeronautical Propulsion Technology (62303A)		
New Propellants		
Fast Burning Propellants		
Ultra-fast Burning Rate Propellants		
Propellant Mixtures		
Stabilizing Component		
Safety & Survivability		
M72	Coperhead	Cannon-Launched Guided Projectile (64621A)
XM736	----	Binary Projectile
High Energy Laser Research (62303A)		
High Energy Laser Research (62307A)		
High Energy Laser Components (63314A)		
Heavy Antitank/Assault Weapon - TOW (23724A)		
Corp Support Weapon System (63320A)		
Nuclear Munitions and Radiacs (63604A)		
Nuclear Effects Support Team (D153)		
Anti-Tank Guided Missiles Improvement		
ATGM Improvements (D097)		
Ground Support Rocket System (GSRS)		
Weapons and Tracked Combat Vehicles (& Related Equipment)		
Weapons/Other Vehicles		
Mobile Weapons/Other Vehicles		
Mobile Weapons		

continued-

Self-Propelled
 AntiTank
 Gun
 Howitzer
 Mortar
 Armored Machine Gun
 Mines

Towed
 Gun
 Howitzer

Other Weapons
 Flame Thrower
 ---- ITV TOW Vehicle
 ---- ---- Fighting Portable Weapon (for IFV)
 ---- ---- Smoke Grenade Launcher
 ---- Staff Smart, Target-Activated Fire-and-Forget
 Tactical ECM System (63755A)
 Tactical ECM System (64750A)
 High Energy Electromagnetic Radiation Weapons (e.g., Lasers)
 Individual Weapons

Other Vehicles
 Bulldozer, Armored Vehicle
 M5
 M6
 M8
 XM11 (M113A1)

Car, Armored Vehicle
 M8
 M706
 XM706
 E1

Cargo, Armored Vehicle
 M548

Tractor, Armored Vehicle
 M4,A1,A1C,AZ,C
 M5,A1,A2,A3,A4
 M6

Utility Armored Vehicle
 M39

Vehicle Launched Bridge, Armored Vehicle
 AVLB

Ammo Support Vehicle
 ---- FAASV Field Artillery Ammunition Support Vehicle

Other Combat Vehicles
 ---- ---- Combat Vehicle HD REF(?)
 ---- HMMWW High Mobility, Multipurpose Wheeled Vehicle

Ambulance, 3/4 ton

Portable Weapons/Ordnance

Technology Base

continued-

Level 6 - continued

Tracked Combat Vehicles

Main Battle Tanks

M1 Abrams Combat (Main Battle) Tank (105MM) (64620A)

M1 Tank Improvements Program (23735A)

M4A3

M24 (Light)

M26

M41, A1, A2, A3

M48, A1, A2, A2C, A3C ---- Main Battle Tank

M60, A1, A1E2, A2, A3 ---- Main Battle Tank (105MM)

M60A1 Product Improvement Program (23735A)

M64, A1

M103, A1

MBT-70

XM-70

XM803

Air-Defense Gun Carrier

M741 ---- Armored Air-Defense Gun Carrier (Vulcan)

Self-Propelled Artillery

Armored Command Post Vehicle

M557A1 ---- Armored Command Post Vehicle

Armored Recovery Vehicles

M32, A1B3

M51

M88A1 ---- Medium Recovery Vehicle

M578

XM696 (M548)

Armored Personnel Carriers

M59

M75

M113, A1, A2 ---- Armored Personnel Carrier

M125, A1

XM 163

XM 667E1

XM668E1

XM727

XM730

XM741

XM754

XM765

Armored Reconnaissance Vehicles

M114A1

M551 Sheridan Armored Reconnaissance Vehicle

XM800

Armored Cargo Carriers

M548 ---- Armored Cargo Carrier/SLUFAE Launcher

Armored Combat Engineer Vehicles

M728

continued-

Level 6 - continued

Armored Missile Carrier

M667	----	Armored Lance Missile Carrier
M727	----	Armored Hawk Missile Carrier
M730	----	Armored Chaparral Missile Carrier
M901	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System

Fighting Vehicle System (IFV-CFV-FUS) (64616A)

Infantry Fighting Vehicle (IFV) (64616A)

M2	IFV	Armored Infantry Fighting Vehicle
----	-----	-----------------------------------

Calvary Fighting Vehicle (CFV) (64629A)

M3	CFV	Armored Calvary Fighting Vehicle
----	-----	----------------------------------

Technology/Base

Tank and Automotive Survivability Technology (62601A)

Artillery Armament Systems (62603A)

Advanced Artillery System Test Beds (62603A)

Munitions Technology (62603A)

Training Munitions (62603A)

Chemical Munitions (62622A)

Advanced Land Mobility System Concepts (63602A)

Combat Vehicle Technology (D118)

High Survivability Test Vehicle (D188)

Combat Vehicle Propulsion System (63621A)

Combat Vehicle Engine (D607)

Advanced Diesel Engine (63626A)

High Mobility MP Wheeled Vehicle (64624A)

Fire Support Team (FIST) Vehicle (64626A)

----	HSTV-L	High-Survivability Test Vehicle - Lightweight
------	--------	---

----	HIGAM	High Mobility/Agility Combat Test Vehicle
------	-------	---

----	OSRS	General Support Rocket System
------	------	-------------------------------

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)

Tank Ammunition

Fuses (over 1,100 types)

M734 Multi-option Fuse

Artillery Ammunition

Propelling Charges

Small Arms Ammunition

Mortar Ammunition

Rockets

Other

Munition Related Chemicals

Renovation

Proveout

Smokes & Obscurants

Infantry Support Systems (64601A)

Smoke Mortar Rounds (D144)

continued-

Level 6 - continued

- Standard Munitions
 - Hexachloroethane (HC) Smoke Mixture (Zinc Oxide and Aluminum Powder)
 - Health Hazards Assessment
 - Red Phosphorus - Butyl Rubber (RP-BR) Smoke (L8A1 Smoke Grenades), (Oiled Red Phosphorus, Methylene Chloride, White Phosphorus)
 - White Phosphorus - Felt Wedge (WP-FW) Smoke (XM825 Smoke Grenades/Projectiles)
- Vaporization/Condensation Aerosols
 - Fog Oil Smoke (use only)
 - Diesel Fuel Smoke (use only)
- Marking/Signaling Smokes
 - Green Smoke
 - Red Smoke
 - Yellow Smoke
 - Violet Smoke
 - Other Colored Smokes
- Training Smokes
- Atomic Material
- Controlled Items
- Miscellaneous
- Technology Base
 - Field Artillery Ammunition Development (63628A)
 - Field Artillery Ammunition Development (D007)
 - Improved Conventional Ammunition (D276)
 - Tank Ammunition Development (63633A)
 - Tank Ammunition and Fuses (D161)
- Explosives
 - Primers
 - Pyrotechnics
 - Blastic Agents
 - Hazards of Blastic Agent Formulations/AEHA
- Fuses
 - Advanced Fuse Design (63613A)
 - Advanced Artillery & Mortar Fusing (DE55)
- Fuse Components
- Cartridge Cases
 - M205E1 152MM Skin Sensitizing Potential
- Smokes & Obscurants
 - Combat Support Munitions (63627A)
 - Smoke Munitions and Material (DE82)
- Training Smokes
- Large Area Screening (LAS)
- Infrared (IR) Screening
- Microwave Screening
- Multispectral Screening (MSS)
- Millimeter Wave Screening
- "One Way" Smokes

continued-

Level 6 - continued

Projectiles

XM11 Projectile (SPAL)

Chemical & Biological Warfare

Chemical Warfare (Offense)

Lethal Chemical Munitions Concepts

Lethal Chemical Materiel (DE76)

Lethal Chemical Agent Process (DE77)

Lethal Chemical Munitions (64610A)

Chemical Protective Respirator

NBC Protective Mask

Modular Collective Protective Equipment

M51 Collective Protective Shelter System

Decontaminating Equipment

Jet Exhaust

Station

Apparatus

500 Gal. APP Decontaminating, Skid Mounted

Training Devices

M8 Chemical Agent Alarm, Auto., Portable

Chemical Agent Detector

Binary CW Agents

Chemical Agents

Lethal Agents

Incapacitating Agents

Chemical Warfare (Defense)

Chemical Defense Materiel Concepts (63721A)

Individual Chemical Protection Materiel (DE80)

Chemical Decontamination Materiel (DE81)

Collective Protection Materiel

Chemical Detection and Warning Materiel (D60)

Collect Chemical Protection Materiel (D604)

Chemical Defense Materiel (64725A)

Chemical Defense Materiel (DF97)

Chemical (Biological Collective Protection (D017)

Individual Chemical Protection (D019)

Chemical Detection and Warning System (D020)

Collective Protection Materiel

Training Systems for Chemical Defense (D138)

Medical Aspects

Treatment

Simulant

Biological Warfare (Defense)

Rapid ID of Agents/Diseases

Biological Agent Alarms

Rapid Diagnosis Agents/Diseases

Lassa Fever

Ebola

BHF

KHF

continued-

Level 6 - continued

Chikungunya
Rift Valley Fever
Toxins
Anthrax
Legionella
Pseudomallei
Q Fever
Junin Virus
Marburg Virus
Tick-Borne Encephalitis Complex
Dengue I
CHF
Biological Toxins
Viruses
Bacteria
Rickettsia
Toxins
Viruses
Toxins

Biological Defense Materiel (64724A)

Biological Defense Materiel (DF45)

Radiological Defense Equipment (64706A)

Ammunition Production Base Support

Achieve Cost Reductions and Enhance Health Safety and Energy

Conservation Characteristics

Active Production Support

Modernization Support

Radford AAP Restore Nitrocellulose Line C

Pine Bluff Arsenal

Automate Grenade Facility

Modernize Smoke Facility

Indiana AAP

81 Mortar

105 MM

155 MM

8 inch Charge

Expansion Support

New Production Capability Support

New 155MM Propelling Charge, Indiana AAP

25 MM Bushmaster Ammunition, Lake City AAP

Metal Parts 105MM Tank Training Projectile, Indiana AAP

M483 Improved Conventional Munition, Mississippi AAP,

Bay St Louis, MS

Provisions for Industrial Facilities Binary Chemical Munitions

Layaway of Industrial Facilities

Manufacturing Technology Program

Pollution Engineering for 1983-85 Requirements (5794214)

Process Parameters for Prod Forming of Projectiles (5796681)

continued-

Level 6 - continued

Improved Nitrocellulose Purification Process (5804341)
Nitroguanidine Process Optimization (5814061)
Others

Military Adaption of Commercial Items
Ammo Depot Plant Equipment Maintenance
Industrial Emissions (Munition Plants)

Other Materiel

Tactical & Support Vehicles

Trucks
Semi-trailers
Trailers of all Types

Communications & Electronics

Fixed
Semi-fixed
Mobile Strategic Communications
Mobile Tactical Communications

Other

Fuels Handling Equipment System (64717A)
Fuels, Lubricants, Additives
Fuels and Equipment (63104A)
Synthetic Fuels & Alternative Fuels
Army Mobility Fuels (Synfuels)
Army Installation/Stationary Synfuels
Army Engine System Developments
High Fuels Technology
Fuels and Munitions
Fuels as Agents

Lubricants

Additives

Fire Control Technology
Armored Vehicle Systems
Fuel Chemical Additives
Icing Inhibitors
Anti-oxidants
Corrosion Inhibitors
Lubricity Additives
Biocides
Static Dissipator Additives

Brake Fluids

Silicone Brake Fluids
Skin Toxicity (NERDCOM)/AEHA
Eye Toxicity (NERDCOM)/AEHA

Clothing, Equipment, Shelters

Clothing and Equipment Technology (62723A)
Shelters (62723A)
Clothing and Equipment (Support/Survivability) (63747A)
Combat Clothing and Equipment (64713A)

Clothing Soaps, Dyes

Clothing

continued-

Level 6 - continued

- Material
 - Textiles
 - Face Nets
 - Arctic Clothing
 - Rhoplex TR-96 (NRDC)
 - Emulsion E-1552 (NRDC)
 - Helmets
 - Body Armor
 - Spectacles
 - Gloves
 - Linurs
 - Coveralls
 - Nomex E-22 (NRDC)
 - Goggles
 - Sunglasses/Cases
 - Masks
 - M24/25 A1
 - Mark V
 - Shoes
 - Socks
 - Hydrophilic Nylon Fiber (NRDC)
- Soaps, Detergents Cosmetics
 - Soaps
 - Detergents
 - Cosmetics
- Dyes
- Oil Repellents
- Water Repellents
 - Clothing
 - Before Wash
 - After Wash
 - Leatherwear
 - FC-233 (NRDC)
- Sleeping Bags
 - Batting
 - Polyester
 - Rhoplex TR-96 (NRDC)
 - Emulsion E-1552 (NRDC)
- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Water Quality Criteria (Field Army)
 - Water Supply Equipment Family
 - Drinking Water Containers

continued-

Level 6 - continued

- Reverse Osmosis Water Purification Unit
- Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
 - Pesticides
 - New Chemicals
 - Permethrin (Subchronic Inhalation)/AEHA
 - Disposal Unit
 - Fungicides
 - Mattress Batting
 - Fire Retardant Resins
 - Tick & Flea Collars
 - Rodenticides
 - New Chemicals
 - Disposal Unit
 - Herbicides
- Preservatives
 - Leather
 - Paranitrophenol (DARCOM)
 - Chronic Hazard/AEHA
 - Wood
 - Structural
- Stain Release Agents
 - Military Clothing
 - Sun Chemical
 - Prym 47 (NRDC)
- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Material (A836)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)
 - Drugs, Vaccines, Repellents
 - Drugs and Vaccines Developments (63750A)
 - Bacterial
 - Viral
 - Rickettsia
 - Parasitic
 - Antiradiation Drugs
 - Infection Prevention/Retardation Drugs Resulting from Massive Trauma, Amputation and Burns
 - Antishock Drugs
 - Behavioral Science Research (61102A)
 - Military Disease Hazards Technology (62770A)
 - Risk Assessment of Mil. Diseases (A870)
 - Prevention of Mil. Diseases (A871)
 - Combat Casualty Treatment Technology (627724)
 - Military Research Animal Resources (A812)
 - Combat Casualty Treatment Technology (A874)
 - Medical Systems in Nonconventional Warfare (A875)

continued-

Level 6 - continued

- Systems Health Prevention Technology (62777A)
 - Health Hazards of Mil. Materiel (A878)
 - Medical Factors Limiting (A879)
- Repellents
 - New Candidates
 - Commercially-Available
 - Reformulations
 - New Polymer Formulations
 - Controlled-Release Additives
 - Insecticide
 - Diethyl Metatoluamide (AFPCB)
 - 3-(phenoxyphenyl) methyl (±)-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclo-propane carboxylate (Permethrin) (AFPCB)
 - (5-Benzyl-3-furyl)Methyl-2,2-Dimethyl-3-(2-Methylpropenyl) Cyclo panecarboxylate (Resmethrin) (AFPCB)
 - Toxicological Hazards/AEHA
- Medical/Dental Device
 - Medical Devices
 - Combat Maxillofacial Injury and Materiels (62775A)
 - Dental Devices
 - Dental Diseases
 - Dental Materiels
- Chemical Warfare (Defense)
 - Prophylaxis Drugs
 - Defense System CW/BW Research (61102A)
 - Chemical/Biological Defense Investigations (62706A)
 - Medical Defense Against Chemical Weapons (62734A)
- Basic Toxicology Research
 - Extrapolation of Data
 - Interspecies (From Animal to Man)
 - Intraspecies (Man to Man Incorporating Population Considerations)
 - Low to High Concentrations
 - Other
 - Chemicals Used to Extend Life to Whole Blood for Blood Replacements
 - Anesthetics
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Training Exercises
 - Pollution Abatement Process Technology Research (61102A)
 - Installation Effluents
 - Army Posts
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - Army Ammunition Plant (MBRDL)
 - TNT Wastewaters Toxicity

continued-

Level 6 - continued

- Identification of Health Effects of Mil. Pollutants (A835)
- Environmental Quality of Construction and Operation (A896)
- Environmental Quality R&D (D048)
- TRADOC Studies & Analyses (65102A)
- TRADOC Studies & Analyses (M980)
- Support of Development Testing (65702A)
- Test Design & Evaluation (D026)
- Field Smoke Assessment (D204)
- Aircraft Development Test Activity (D618)
- Materiel Systems Analysis (65706A)
- US Army Materiel Systems Analysis (M541)
- Exploitation of Foreign Items (65709A)
- Exploitation of Foreign Items (D650)
- Support of Operational Testing (65712A)
- Test Boards (DV02)
- Evaluation of Materiel Concepts (D985)
- Foreign Weapons Evaluation (65714A)
- Program-Wide Activities (65801A)
- DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
- DOD Munitions Effectiveness (D620)
- Explosive Safety Standards (M857)
- Other Support Equipment
 - Combat Support Equipment (63726A)
 - General Support Equipment (DK39)
 - Combat Support Equipment
 - Tactical Bridging
 - Shop Sets
 - Construction Equipment
 - Floating & Rail Equipment
 - Generators & Associated Equipment
 - Material Handling Equipment
 - Medical Support Equipment
 - Special Equipment
 - User Testing
 - Nonsystem Training Devices
 - Support Equipment Facilities
 - Military Policy
 - Riot Control Agents
- Material
 - Military Inventory
 - Hazard to Military Personnel/AEHA
 - Topical Health Hazards (AEHA)
 - Toxicology Evaluations (Work Units) AEHA, 1978
 - Pathology and Animal Care Work Units, AEHA, 1978
 - Others
 - p-Chlorophenyl Methyl Sulfide
 - p-Chlorophenyl Methyl Sulfoxide
 - p-Chlorophenyl Methyl Sulfone

REQUIREMENTS CATEGORIES (LEVEL 7)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)
- Safety
 - Air Worthiness
 - Mid-air collision
 - Carbon Fiber Exposure
 - Carbon Fiber Health Hazard
 - Acute Inhalation Exposure/AEHA
 - Delayed Hazard/AEHA
 - Project HANS, Carbon Fibers
 - in Simulated Jet Plan Accident/AEHA

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C Chaparral	Forward Air-Defense Missile (23730A)
Rocket	

continued-

Level 7 - continued

	Motor	
	Smokeless Propellant System	
	Exhaust Products/Gas Emissions	
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile
----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade	(64313A)
----	LCSS	
Surface-to-Surface		
Antitank/Assault		
FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket
Technology Base		
Propulsion		
	Solid Rocket Fuel System Propellants	
	Aeronautical Propulsion Technology (62303A)	
	New Propellants	
	Fast Burning Propellants	
	Ultra-fast Burning Rate Propellants	
	Carboranyl Methyl Propionate	
	Propellant Mixtures	
	Stabilizing Component	
	Ethyl Centralite (ARRCOM)	
Safety & Survivability		
M72	Coperhead	Cannon-Launched Guided Projectile (64621A)
XM736	----	Binary Projectile
	High Energy Laser Research (62303A)	
	High Energy Laser Research (62307A)	
	High Energy Laser Components (63314A)	
	Heavy Antitank/Assault Weapon - TOW (23724A)	
	Corp Support Weapon System (63320A)	
	Nuclear Munitions and Radiacs (63604A)	
	Nuclear Effects Support Team (D153)	

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Level 7 - continued

Anti-Tank Guided Missiles Improvement
 ATGM Improvements (D097)
 Ground Support Rocket System (GSRS)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Weapons/Other Vehicles

Mobile Weapons/Other Vehicles

Mobile Weapons

Self-Propelled

AntiTank

M56

Gun

M42,A1

M107 (T235E1)

Howitzer

M37

M44,A1

M52,A1

M55 (T108)

M107 ----

Self-Propelled 175MM Gun

M108

M109

M110 (T236E1), A2

---- Self-Propelled 8" Heavy
 Howitzer

M109A2 ----

Self-Propelled 155MM Howitzer

Mortar

M29

81MM

Mortar

M30

4.2 In

Heavy Mortar

M84

M106,A1

M125A1

81MM Mortar Carrier

M224

60MM

Lightweight Company Mortar

XM252

81MM

Mortar

Armored Machine Gun

XM253

81MM Mortar

M224

Lightweight Company Mortar

M240

Armored Machine Gun

50 Cal. Mount Machine Gun
 (for CFV)

Bushmaster

Vehicle Rapid Fire Weapon
 System

ESPAWS

Enhanced Self-Propelled
 Artillery Weapon

Mines

Ground-Emplaced Mine - Scattering System (GEMSS)

Modular Pack Mine System (MOPMS)

M16A2 Antipersonnel Mine

M18A1 Claymore Antipersonnel Mine

continued-

Level 7 - continued

Towed

Gun

M59

Howitzer

M1A1

M45

M52

M101,A1 ---- 105MM

M102 ---- 105MM

M114,A1 ---- 155MM

M115

M116

M123,A1

M126

M137

M138

XM179

M198 ---- 155M Medium Towed Howitzer

M14A2 ---- 155M Towed Howitzer

M102 ---- 105MM Towed Howitzer

M101A1 ---- 105MM Towed Howitzer

Other Weapons

Flame Thrower

M132,A1

---- ITV TOW Vehicle

---- ---- Fighting Portable Weapon (for IFV)

---- ---- Smoke Grenade Launcher

---- Staff Smart, Target-Activated Fire-and-Forget

Tactical ECM System (63755A)

Protective Electronic Warfare Equipment (D251)

Tactical ECM System (64750A)

Protective Electronic Warfare Equipment (D540)

High Energy Electromagnetic Radiation Weapons (e.g., Lasers)

Individual Weapons

Personal Defense Weapons

Rifles

Individual Weapons Sights

Hand Grenades

Infantry Support Weapons

Physiological Effects

Health Effects

Technology Base

Other Vehicles

Bulldozer, Armored Vehicle

M5

M6

M8

XM11 (M113A1)

continued-

Level 7 - continued

Car, Armored Vehicle	
M8	
M706	
XM706	
E1	
Cargo, Armored Vehicle	
M548	
Tractor, Armored Vehicle	
M4,A1,A1C,AZ,C	
M5,A1,A2,A3,A4	
M6	
Utility Armored Vehicle	
M39	
Vehicle Launched Bridge, Armored Vehicle	
AVLB	
Ammo Support Vehicle	
----	FAASV Field Artillery Ammunition Support Vehicle
Other Combat Vehicles	
----	----
----	Combat Vehicle HD REF(?)
----	HMMWW High Mobility, Multipurpose Wheeled Vehicle
Ambulance, 3/4 ton	
M43 Series	
Portable Weapons/Ordnance	
Technology Base	
Tracked Combat Vehicles	
Main Battle Tanks	
M1 Abrams	Combat (Main Battle) Tank (105MM) (64620A)
M1 Tank Improvements Program	(23735A)
M4A3	
M24 (Light)	
M26	
M41,A1,A2,A3	
M48,A1,A2,A2C,A3C	---- Main Battle Tank
M60,A1,A1E2,A2,A3	---- Main Battle Tank (105MM)
M60A1 Product Improvement Program (23735A)	
M64,A1	
M103,A1	
MBT-70	
XM-70	
XM803	
Air-Defense Gun Carrier	
M741	---- Armored Air-Defense Gun Carrier (Vulcan)
Self-Propelled Artillery	
Armored Command Post Vehicle	
M557A1	---- Armored Command Post Vehicle
Armored Recovery Vehicles	
M32,A1B3	
M51	

continued-

Level 7 - continued

M88A1	----	Medium Recovery Vehicle
M578		
XM696 (M548)		
Armored Personnel Carriers		
M59		
M75		
M113,A1,A2	----	Armored Personnel Carrier
M125,A1		
XM 163		
XM 667E1		
XM668E1		
XM727		
XM730		
XM741		
XM754		
XM765		
Armored Reconnaissance Vehicles		
M114A1		
M551	Sheridan	Armored Reconnaissance Vehicle
XM800		
Armored Cargo Carriers		
M548	----	Armored Cargo Carrier/SLUFAE Launcher
Armored Combat Engineer Vehicles		
M728		
Armored Missile Carrier		
M667	----	Armored Lance Missile Carrier
M727	----	Armored Hawk Missile Carrier
M730	----	Armored Chaparral Missile Carrier
M901	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System
Fighting Vehicle System (IFV-CFV-FUS) (64616A)		
Infantry Fighting Vehicle (IFV) (64616A)		
M2	IFV	Armored Infantry Fighting Vehicle
Calvary Fighting Vehicle (CFV) (64629A)		
M3	CFV	Armored Calvary Fighting Vehicle
Technology/Base		
Tank and Automotive Survivability Technology (62601A)		
Artillery Armament Systems (62603A)		
Advanced Artillery System Test Beds (62603A)		
Munitions Technology (62603A)		
Training Munitions (62603A)		
Chemical Munitions (62622A)		
Advanced Land Mobility System Concepts (63602A)		
Combat Vehicle Technology (D118)		
High Survivability Test Vehicle (D188)		
Combat Vehicle Propulsion System (63621A)		
Combat Vehicle Engine (D607)		
Advanced Diesel Engine (63626A)		
High Mobility MP Wheeled Vehicle (64624A)		

continued-

Level 7 - continued

Fire Support Team (FIST) Vehicle (64626A)	
---- HSTV-L	High-Survivability Test Vehicle - Lightweight
---- HIGAM	High Mobility/Agility Combat Test Vehicle
---- OSRS	General Support Rocket System

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)

- Tank Ammunition
- Fuses (over 1,100 types)
 - M734 Multi-option Fuse
- Artillery Ammunition
- Propelling Charges
- Small Arms Ammunition
- Mortar Ammunition
- Rockets
- Other

Munition Related Chemicals

Renovation

Proveout

Smokes & Obscurants

Infantry Support Systems (64601A)

Smoke Mortar Rounds (D144)

Standard Munitions

Hexachloroethane (HC) Smoke Mixture (Zinc Oxide and Aluminum Powder)

Health Hazards Assessment

Occupational Health

Red Phosphorus - Butyl Rubber (RP-BR) Smoke (L8A1 Smoke Grenades), (Oiled Red Phosphorus, Methylene Chloride, White Phosphorus)

White Phosphorus - Felt Wedge (WP-FW) Smoke (XM825 Smoke Grenades/Projectiles)

Vaporization/Condensation Aerosols

Fog Oil Smoke (use only)

Diesel Fuel Smoke (use only)

Marking/Signaling Smokes

Green Smoke

Red Smoke

Yellow Smoke

Violet Smoke

Other Colored Smokes

Training Smokes

Atomic Material

Controlled Items

Miscellaneous

Technology Base

Field Artillery Ammunition Development (63628A)

Field Artillery Ammunition Development (D007)

Improved Conventional Ammunition (D276)

continued-

Level 7 - continued

- Tank Ammunition Development (63633A)
 - Tank Ammunition and Fuses (D161)
- Explosives
 - Primers
 - Pyrotechnics
 - Blastic Agents
 - Hazards of Blastic Agent Formulations/AEHA
- Fuses
 - Advanced Fuse Design (63613A)
 - Advanced Artillery & Mortar Fusing (DE55)
 - Fuse Components
 - Cartridge Cases
 - M205E1 152MM Skin Sensitizing Potential
- Smokes & Obscurants
 - Combat Support Munitions (63627A)
 - Smoke Munitions and Material (DE82)
 - Training Smokes
 - Large Area Screening (LAS)
 - Infrared (IR) Screening
 - Microwave Screening
 - Multispectral Screening (MSS)
 - Millimeter Wave Screening
 - "One Way" Smokes
- Projectiles
 - XM11 Projectile (SPAL)
- Chemical & Biological Warfare
 - Chemical Warfare (Offense)
 - Lethal Chemical Munitions Concepts
 - Lethal Chemical Materiel (DE76)
 - Lethal Chemical Agent Process (DE77)
 - Lethal Chemical Munitions (64610A)
 - Chemical Protective Respirator
 - NBC Protective Mask
 - Multipurpose Mask for CBR Protection
 - Modular Collective Protective Equipment
 - M51 Collective Protective Shelter System
 - Decontaminating Equipment
 - Jet Exhaust
 - Station
 - Apparatus
 - 500 Gal. APP Decontaminating, Skid Mounted
 - Training Devices
 - M8 Chemical Agent Alarm, Auto., Portable
 - Chemical Agent Detector
 - Binary CW Agents
 - Chemical Agents
 - Lethal Agents
 - Nerve Agents
 - Choking Agents
 - Blood Agents

continued-

Level 7 - continued

- Incapacitating Agents
 - Central Nervous System Depressants
 - Central Nervous System Simulants, Hallucinogenics
- Chemical Warfare (Defense)
 - Chemical Defense Materiel Concepts (63721A)
 - Individual Chemical Protection Materiel (DE80)
 - Mask
 - Gloves
 - Respirator
 - Hood
 - Footware
 - Overgarment
 - Chemical Decontamination Materiel (DE81)
 - Apparatus
 - Skin
 - Patient
 - M258 Kit
 - Station
 - Agent decontamination solution toxicity testing
 - Collective Protection Materiel
 - Armored Vehicles (DJ30)
 - Chemical Detection and Warning Materiel (D60)
 - Collect Chemical Protection Materiel (D604)
 - Chemical Defense Materiel (64725A)
 - Chemical Defense Materiel (DF97)
 - Chemical (Biological Collective Protection (D017)
 - Individual Chemical Protection (D019)
 - Chemical Detection and Warning System (D020)
 - Collective Protection Materiel
 - Armored Vehicles (D023)
 - Training Systems for Chemical Defense (D138)
- Medical Aspects
 - Treatment
 - Simulant
- Biological Warfare (Defense)
 - Rapid ID of Agents/Diseases
 - Biological Agent Alarms
 - Rapid Diagnosis Agents/Diseases
 - Lassa Fever
 - Ebola
 - BHF
 - KHF
 - Chikungunya
 - Rift Valley Fever
 - Toxins
 - Anthrax
 - Legionella
 - Pseudomallei
 - Q Fever

continued-

Level 7 - continued

- Junin Virus
- Marburg Virus
- Tick-Borne Encephalitis Complex
- Dengue I
- CHF
- Biological Toxins
- Viruses
- Bacteria
- Rickettsia
- Toxins
- Viruses
- Toxins
- Biological Defense Materiel (64724A)
- Biological Defense Materiel (DF45)
- Radiological Defense Equipment (64706A)
- Ammunition Production Base Support
 - Achieve Cost Reductions and Enhance Health Safety and Energy
 - Conservation Characteristics
 - Active Production Support
 - Modernization Support
 - Radford AAP Restore Nitrocellulose Line C
 - Pine Bluff Arsenal
 - Automate Grenade Facility
 - Modernize Smoke Facility
 - Indiana AAP
 - 81 Motar
 - 105 MM
 - 155 MM
 - 8 inch Charge
 - Expansion Support
 - New Production Capability Support
 - New 155MM Propelling Charge, Indiana AAP
 - 25 MM Bushmaster Ammunition, Lake City AAP
 - Metal Parts 105MM Tank Training Projectile, Indiana AAP
 - M483 Improved Conventional Munition, Mississippi AAP, Bay St Louis, MS
 - Provisions for Industrial Facilities Binary Chemical Munitions
 - Layaway of Industrial Facilities
 - Manufacturing Technology Program
 - Pollution Engineering for 1983-85 Requirements (5794214)
 - Process Parameters for Prod Forming of Projectiles (5796681)
 - Improved Nitrocellulose Purification Process (5804341)
 - Nitroguanidine Process Optimization (5814061)
 - Others
 - Military Adaption of Commercial Items
 - Ammo Depot Plant Equipment Maintenance
 - Industrial Emissions (Munition Plants)

continued-

Level 7 - continued

Other Materiel

Tactical & Support Vehicles

Trucks

Semi-trailers

Trailers of all Types

Communications & Electronics

Fixed

Semi-fixed

Mobile Strategic Communications

Mobile Tactical Communications

Other

Fuels Handling Equipment System (64717A)

Fuels, Lubricants, Additives

Fuels and Equipment (63104A)

Synthetic Fuels & Alternative Fuels

Army Mobility Fuels (Synfuels)

Oil Shale Derived

Coal Derived

Biomass Derived

Tar Sands Derived

Army Installation/Stationary Synfuels

Army Engine System Developments

High Fuels Technology

Fuels and Munitions

Fuels as Agents

Lubricants

Additives

Fire Control Technology

Armored Vehicle Systems

Fuel Chemical Additives

Icing Inhibitors

Anti-oxidants

Corrosion Inhibitors

Lubricity Additives

Biocides

Static Dissipator Additives

Brake Fluids

Silicone Brake Fluids

Skin Toxicity (NERDCOM)/AEHA

Eye Toxicity (NERDCOM)/AEHA

Clothing, Equipment, Shelters

Clothing and Equipment Technology (62723A)

Shelters (62723A)

Clothing and Equipment (Support/Survivability) (63747A)

Combat Clothing and Equipment (64713A)

Clothing Soaps, Dyes

Clothing

Material

Textiles

Durable Press

Fire-Retardants

continued-

Level 7 - continued

- Face Nets
- Arctic Clothing
 - Rhoplex TR-96 (NRDC)
 - Dermal Toxicity/AEHA
 - Emulsion E-1552 (NRDC)
 - Dermal Toxicity/AEHA
- Helmets
- Body Armor
- Spectacles
- Gloves
 - Linurs
 - Non-irritating Fabric
- Coveralls
 - Nomex E-22 (NRDC)
 - Dermal Toxicity/AEHA
- Goggles
 - Sunglasses/Cases
 - HGU-4P
- Masks
 - M24/25 A1
 - Rubber Formulations
 - Mark V
 - Rubber Formulations
- Shoes
- Socks
 - Hydrophilic Nylon Fiber (NRDC)
 - Dermal Toxicity/AEHA
- Soaps, Detergents Cosmetics
 - Soaps
 - Detergents
 - Cosmetics
- Dyes
- Oil Repellents
- Water Repellents
 - Clothing
 - Before Wash
 - After Wash
 - Norane 18 (NRDC)
 - Auropel
 - Synthopel
 - Noreno
- Leatherwear
 - FC-233 (NRDC)
 - Dermal Toxicity/AEHA
- Sleeping Bags
- Batting
- Polyester
 - Rhoplex TR-96 (NRDC)
 - Dermal Toxicity/AEHA
 - Emulsion E-1552 (NRDC)
 - Dermal Toxicity/AEHA

continued-

Level 7 - continued

- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Water Quality Criteria (Field Army)
 - Water Supply Equipment Family
 - Drinking Water Containers
 - Drinking Water Drop Bags
 - Reverse Osmosis Water Purification Unit
 - Sanitation
 - Pesticides, Fungicides, Rodenticides, Herbicides
 - Pesticides
 - New Chemicals
 - Permethrin (Subchronic Inhalation)/AEHA
 - Disposal Unit
 - Fungicides
 - Mattress Batting
 - Fire Retardant Resins
 - Tick & Flea Collars
 - Rodenticides
 - New Chemicals
 - Disposal Unit
 - Herbicides
- Preservatives
 - Leather
 - Paranitrophenol (DARCOM)
 - Chronic Hazard/AEHA
 - Wood
 - Structural
- Stain Release Agents
 - Military Clothing
 - Sun Chemical
 - Prym 47 (NRDC)
 - Dermal Toxicity/AEHA
- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Material (A836)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)
 - Drugs, Vaccines, Repellents
 - Drugs and Vaccines Developments (63750A)
 - Bacterial
 - Meningococcal Meningitis
 - Bacillary Dysentery (Shigella)
 - Diarrhea (Escherichia coli)
 - Pseudomonas
 - Gonococcus

continued-

Level 7 - continued

Viral

Dengue Fever
Sand Fly Fever
Hepatitis
Adenovirus

Rickettsia

Scrub Typhus

Parasitic

Malaria
Leishmaniasis

Antiradiation Drugs

Infection Prevention/Retardation Drugs Resulting from
Massive Trauma, Amputation and Burns

Antishock Drugs

Behavioral Science Research (61102A)

Military Disease Hazards Technology (62770A)

Risk Assessment of Mil. Diseases (A870)

Prevention of Mil. Diseases (A871)

Combat Casualty Treatment Technology (627724)

Military Research Animal Resources (A812)

Combat Casualty Treatment Technology (A874)

Medical Systems in Nonconventional Warfare (A875)

Systems Health Prevention Technology (62777A)

Health Hazards of Mil. Materiel (A878)

Medical Factors Limiting (A879)

Repellents

New Candidates

Louse Toxicant (Pediculicide)

Malathion

Commercially-Available

Reformulations

New Polymer Formulations

Controlled-Release Additives

Insecticide

Propellant

DEET Acute Inhalation

Subchronic Inhalation

Behavioral

Diethyl Metatoluamide (AFPCB)

Chronic

3-(phenoxyphenyl) methyl (\pm)-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclo-propane carboxylate
(Permethrin) (AFPCB)

(5-Benzyl-3-furyl)Methyl-2,2-Dimethyl-3-(2-Methylpropenyl)
Cyclo panecarboxylate (Resmethrin) (AFPCB)

Toxicological Hazards/AEHA

Medical/Dental Device

Medical Devices

Combat Maxillofacial Injury and Materiels (62775A)

continued-

Level 7 - continued

- Protective Devices
 - Moldable Polymeric Material
 - Spray-on Bandages (biodegradable, biocompatible, with nemostasis, antiseptis, anesthesia properties)
 - Artificial Skin and Contouring Material
 - Esophageal/Tracheal Transplant Materials
 - Microencapsulated Antibiotics
 - Permanent Implants
 - Implants in Contact with Mucosal Tissue
 - Corrective, Protective and Supportive Devices
 - Collection and Administration Devices
 - Storage Devices
- Dental Devices
 - Dental Diseases
 - Dental Materiels
 - Biocompatible Tooth Implants
 - Artificial Bone Implant Materials
 - Beryliumin Castings
 - Beryliumin Grindings
- Chemical Warfare (Defense)
 - Prophylaxis Drugs
 - Defense System CW/BW Research (61102A)
 - Chemical/Biological Defense Investigations (62706A)
 - Medical Defense Against Chemical Weapons (62734A)
- Basic Toxicology Research
 - Extrapolation of Data
 - Interspecies (From Animal to Man)
 - Intraspecies (Man to Man Incorporating Population Considerations)
 - Low to High Concentrations
- Other
 - Chemicals Used to Extend Life to Whole Blood for Transfusions
 - Blood Replacements
 - Anesthetics
 - Operating Room
 - Dental Clinic
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Training Exercises
 - Pollution Abatement Process Technology Research (61102A)
 - Installation Effluents
 - Army Posts
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - Army Ammunition Plant (MBRDL)
 - TNT Wastewaters Toxicity

continued-

Level 7 - continued

- Pink Water
- Condensate Water
- RDX L 1,3,5 Trinitrohexahydro-1,3,5-Triazine)
- 2,4-DNT
- TNT (Trinitrotoluene)
- DCPD (Dicyclopentadiene)
- DIM P (Di isopropyl methyl phosphonate)
- Identification of Health Effects of Mil. Pollutants (A835)
- Environmental Quality of Construction and Operation (A896)
- Environmental Quality R&D (D048)
- TRADOC Studies & Analyses (65102A)
- TRADOC Studies & Analyses (M980)
- Support of Development Testing (65702A)
- Test Design & Evaluation (D026)
- Field Smoke Assessment (D204)
- Aircraft Development Test Activity (D618)
- Material Systems Analysis (65706A)
- US Army Materiel Systems Analysis (M541)
- Exploitation of Foreign Items (65709A)
- Exploitation of Foreign Items (D650)
- Support of Operational Testing (65712A)
- Test Boards (DV02)
- Evaluation of Materiel Concepts (D985)
- Foreign Weapons Evaluation (65714A)
- Program-Wide Activities (65801A)
- DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
- DOD Munitions Effectiveness (D620)
- Explosive Safety Standards (M857)
- Other Support Equipment
 - Combat Support Equipment (63726A)
 - General Support Equipment (DK39)
 - Combat Support Equipment
 - Tactical Bridging
 - Shop Sets
 - Construction Equipment
 - Floating & Rail Equipment
 - Generators & Associated Equipment
 - Material Handling Equipment
 - Medical Support Equipment
 - Special Equipment
 - User Testing
 - Nonsystem Training Devices
 - Support Equipment Facilities
 - Military Policy
 - Riot Control Agents
 - Material
 - Military Inventory
 - Hazard to Military Personnel/AEHA
 - Tier 1, 2,

continued-

Level 7 - continued

Topical Health Hazards (AEHA)	
Dermal, Irritation, Rabbits	
Ocular, Irritation, Rabbits	
Photochemically Induced Dermal Irritation, Rabbits	
Approximate Oral Toxicity, Rats	
Dermal Sensitization, Guinea Pigs	
Toxicology Evaluations (Work Units) AEHA, 1978	
LD ₅₀ Rats and Rabbits	202
Approximate Lethal Dose - Acute - Rats and Rabbits	219
30-Day Alternate Feeding Study	30
Guinea Pig Sensitization Test	890
Rabbit Wear Test - 24-Day	67
Prenatal Toxicity - Adult Rat	295
Prenatal Toxicity - Rat Fetuses	2,572
Inhalation - Hazard Evaluation - Saturated Vapor	54
Inhalation Acute Short Term - Rat, Quail and Rabbit	263
Inhalation Subchronic	620
Literature Searches and Reviews	135
Prothrombin Time - Samples	98
Blood Gas Analysis	100
Rapid Avoidance - Rat	217
Enzyme Induction - Rat	604
Activity Drum, Rat	246
Physiological Measurements	80
Atmospheric Sample Collection	1,584
Photosensitization	139
Subchronic Ingestion	32
Shuttlebox Avoidance, Rodent	870
Long Term Activity Monitor, Rodent	300
Sidman Avoidance, Rodent	16
Passive Avoidance, Rodent	239
Air Blast Escape, Rodent	2
Swimming Endurance and Coordination, Rodent	12
Beam and Grid Balance and Coordination, Rodent	151
Photoirritation Skin Study	276
Counted Asbestos Fiber Samples	554
Total	10,867

Pathology and Animal Care Work Units, AEHA, 1978

Primary Irritation Evaluation Skin - Rabbits	406
Primary Irritation Evaluation Eye - Rabbits	484
Necropsy	1,398
Histopathology - Tissues Processed	30,072
Histopathology - Tissues Evaluated	22,343

continued-

Level 7 - continued

Complete Blood Counts	482
Differential Blood Counts	482
Coulter Counter Standards	308
Fecal Analysis	20
Urinalysis	311
Animals Weaned - Rats	5,906
Radioactive Treatment, Animals	64
Radioactive Sample Determinations	1,296
EM Tissues Processed	338
EM Thin Prep	180
EM Plates Processed	216
EM Prints Prepared	50
	Total
	64,356
Others	
p-Chlorophenyl Methyl Sulfide	
p-Chlorophenyl Methyl Sulfoxide	
p-Chlorophenyl Methyl Sulfone	

REQUIREMENTS CATEGORIES (LEVEL 8)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H	Huey	Utility Helicopter (64215A)
CH-58B	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)
- Safety
 - Air Worthiness
 - Mid-air collision
 - Carbon Fiber Exposure
 - Carbon Fiber Health Hazard
 - Acute Inhalation Exposure/AEHA
 - Delayed Hazard/AEHA
 - Project HANS, Carbon Fibers
 - in Simulated Jet Plan Accident/AEHA

Missiles (& Related Equipment)

Surface-to-Air

Level 8 - continued

	Smokeless Propellant System	
	Exhaust Products/Gas Emissions	
	Toxic Hazards	
MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile
----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade	(64313A)
----	LCSS	
Surface-to-Surface		
Antitank/Assault		
	FGM77A	Dragon Medium Antitank Missile
	BGM71A	TOW Heavy Antitank Missile
	MGM52C	Lance Battlefield Support Missile
	MGM31A	Pershing Ia Battlefield Support Missile
	MGM31	Pershing II Battlefield Support Missile (64311A)
	MGRIB	Honest John Unguided Artillery Rocket
	MLRS	----- Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket
Technology Base		
Propulsion		
Solid Rocket Fuel System Propellants		
Aeronautical Propulsion Technology (62303A)		
New Propellants		
Fast Burning Propellants		
Ultra-fast Burning Rate Propellants		
Carboranyl Methyl Propionate		
Toxicological Evaluation/AEHA		
Propellant Mixtures		
Stabilizing Component		
Ethyl Centralite (ARRCOM)		
Toxic Hazard/AEHA		
Safety & Survivability		
M72	Coperhead	Cannon-Launched Guided Projectile (64621A)
XM736	----	Binary Projectile
High Energy Laser Research (62303A)		
High Energy Laser Research (62307A)		
High Energy Laser Components (63314A)		
Heavy Antitank/Assault Weapon - TOW (23724A)		
Corp Support Weapon System (63320A)		

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Level 8 - continued

Nuclear Munitions and Radiacs (63604A)
Nuclear Effects Support Team (D153)
Anti-Tank Guided Missiles Improvement
ATGM Improvements (D097)
Ground Support Rocket System (GSRS)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Weapons/Other Vehicles

Mobile Weapons/Other Vehicles

Mobile Weapons

Self-Propelled

AntiTank

M56

Gun

M42,A1

M107 (T235E1)

Howitzer

M37

M44,A1

M52,A1

M55 (T108)

M107 ----

Self-Propelled 175MM Gun

M108

M109

M110 (T236E1), A2 ----

Self-Propelled 8" Heavy Howitzer

M109A2 ----

Self-Propelled 155MM Howitzer

Mortar

M29

81MM

Mortar

M30

4.2 In

Heavy Mortar

M84

M106,A1

M125A1 ----

81MM Mortar Carrier

M224

60MM

Lightweight Company Mortar

XM252 81MM

Mortar

Armored Machine Gun

XM253 ----

81MM Mortar

M224 ----

Lightweight Company Mortar

M240 ----

Armored Machine Gun

---- ----

50 Cal. Mount Machine Gun (for CFV)

---- Bushmaster

Vehicle Rapid Fire Weapon System

---- ESPAWS

Enhanced Self-Propelled Artillery Weapon

Mines

Ground-Emplaced Mine - Scattering System (GEMSS)

Modular Pack Mine System (MOPMS)

M16A2 Antipersonnel Mine

M18A1 Claymore Antipersonnel Mine

continued-

Level 8 - continued

Towed

Gun

M59

Howitzer

M1A1

M45

M52

M101,A1 ----

105MM

M102 ----

105MM

M114,A1 ----

155MM

M115

M116

M123,A1

M126

M137

M138

XM179

M198 ----

155M Medium Towed Howitzer

M14A2 ----

155M Towed Howitzer

M102 ----

105MM Towed Howitzer

M101A1 ----

105MM Towed Howitzer

Other Weapons

Flame Thrower

M132,A1

---- ITV

TOW Vehicle

Fighting Portable Weapon (for IFV)

Smoke Grenade Launcher

---- Staff

Smart, Target-Activated Fire-and-Forget

Tactical ECM System (63755A)

Protective Electronic Warfare Equipment (D251)

Tactical ECM System (64750A)

Protective Electronic Warfare Equipment (D540)

High Energy Electromagnetic Radiation Weapons (e.g., Lasers)

Individual Weapons

Personal Defense Weapons

M1911 A1

Model 459, S & W

Model 459A, S & W

M59

SSP, Colt

925-1

1935 Browning

M28

P95

VP-70

PSP

Others

Rifles

M14

M21

continued-

Level 8 - continued

- Accurate Rifle System
 - M16 A1
 - Advanced Rifle
- Individual Weapons Sights
 - AN/PVS-4
 - AN/PVS-2
 - AN/PVS-5A
 - Low Cost Night Vision Aids
 - AN/PAQ-4 Infrared Aiming Light
- Hand Grenades
 - M33 Series
 - M67
 - AN-M14 Incendiary
 - M18 Smoke
 - AN-M8 Smoke
- Infantry Support Weapons
 - Squad Automatic Weapons
 - M60 General Purpose Machine Gun
 - M2HB 0.50-Caliber Heavy Machine Gun
 - Grenade Launchers
 - Rifleman's Assault Weapon
 - M202A1 Rocket Launcher
 - TOW Heavy Antitank Missile
 - M40A2 106MM Recoilless Rifle
 - M47 Dragon Medium Antitank Missile
 - Infantry Manportable Anti-Armor Assault
 - M67 90 MM Recoilless Rifle
 - M72A2 66 MM Light Antitank Weapon
- Physiological Effects
 - Low-Level Effects on Vision (Primates)
 - Chronic Low-Level Effects (Primates)
 - Human Visibility Testing System Development
 - Protection Concepts and Recommendations
- Health Effects
 - Ocular Effects (Visible Near IR, Far IR, Near Millimeter)
 - Ocular Protection (Training and Tactical)
 - Mechanism of Laser/Tissue Interaction
- Technology Base
 - MSL/H1 Energy Laser Research (61102A)
- Other Vehicles
 - Bulldozer, Armored Vehicle
 - M5
 - M6
 - M8
 - XM11 (M113A1)
 - Car, Armored Vehicle
 - M8
 - M706
 - XM706
 - E1

continued-

Level 8 - continued

Cargo, Armored Vehicle		
M548		
Tractor, Armored Vehicle		
M4,A1,A1C,AZ,C		
M5,A1,A2,A3,A4		
M6		
Utility Armored Vehicle		
M39		
Vehicle Launched Bridge, Armored Vehicle		
AVLB		
Ammo Support Vehicle		
----	FAASV	Field Artillery Ammunition Support Vehicle
Other Combat Vehicles		
----	----	Combat Vehicle HD REF(?)
----	HMMWV	High Mobility, Multipurpose Wheeled Vehicle
Ambulance, 3/4 ton		
M43 Series		
Portable Weapons/Ordnance		
Technology Base		
Tracked Combat Vehicles		
Main Battle Tanks		
M1	Abrams	Combat (Main Battle) Tank (105MM) (64620A)
M1	Tank Improvements Program (23735A)	
M4A3		
M24 (Light)		
M26		
M41,A1,A2,A3		
M48,A1,A2,A2C,A3C	----	Main Battle Tank
M60,A1,A1E2,A2,A3	----	Main Battle Tank (105MM)
M60A1 Product Improvement Program (23735A)		
M64,A1		
M103,A1		
MBT-70		
XM-70		
XM803		
Air-Defense Gun Carrier		
M741	----	Armored Air-Defense Gun Carrier (Vulcan)
Self-Propelled Artillery		
Armored Command Post Vehicle		
M557A1	----	Armored Command Post Vehicle
Armored Recovery Vehicles		
M32,A1B3		
M51		
M88A1	----	Medium Recovery Vehicle
M578		
XM696 (M548)		
Armored Personnel Carriers		
M59		
M75		

continued-

Level 8 - continued

M113,A1,A2	----	Armored Personnel Carrier
M125,A1		
XM 163		
XM 667E1		
XM668E1		
XM727		
XM730		
XM741		
XM754		
XM765		
Armored Reconnaissance Vehicles		
M114A1		
M551	Sheridan	Armored Reconnaissance Vehicle
XM800		
Armored Cargo Carriers		
M548	----	Armored Cargo Carrier/SLUFAE Launcher
Armored Combat Engineer Vehicles		
M728		
Armored Missile Carrier		
M667	----	Armored Lance Missile Carrier
M727	----	Armored Hawk Missile Carrier
M730	----	Armored Chaparral Missile Carrier
M901	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System
Fighting Vehicle System (IFV-CFV-FUS) (64616A)		
Infantry Fighting Vehicle (IFV) (64616A)		
M2	IFV	Armored Infantry Fighting Vehicle ^(k)
Calvary Fighting Vehicle (CFV) (64629A)		
M3	CFV	Armored Calvary Fighting Vehicle
Technology/Base		
Tank and Automotive Survivability Technology (62601A)		
Artillery Armament Systems (62603A)		
Advanced Artillery System Test Beds (62603A)		
Munitions Technology (62603A)		
Training Munitions (62603A)		
Chemical Munitions (62622A)		
Advanced Land Mobility System Concepts (63602A)		
Combat Vehicle Technology (D118)		
High Survivability Test Vehicle (D188)		
Combat Vehicle Propulsion System (63621A)		
Combat Vehicle Engine (D607)		
Advanced Diesel Engine (63626A)		
High Mobility MP Wheeled Vehicle (64624A)		
Fire Support Team (FIST) Vehicle (64626A)		
----	HSTV-L	High-Survivability Test Vehicle - Lightweight
----	HIGAM	High Mobility/Agility Combat Test Vehicle
----	OSRS	General Support Rocket System
Ammunition (& Related Materiel)		
Ammunition		
Conventional Munitions (Over 50 types)		
Tank Ammunition		

Level 8 - continued

- Fuses (over 1,100 types)
 - M734 Multi-option Fuse
- Artillery Ammunition
- Propelling Charges
- Small Arms Ammunition
- Mortar Ammunition
- Rockets
- Other
 - Munition Related Chemicals
- Renovation
- Proveout
- Smokes & Obscurants
 - Infantry Support Systems (64601A)
 - Smoke Mortar Rounds (D144)
 - Standard Munitions
 - Hexachloroethane (HC) Smoke Mixture (Zinc Oxide and Aluminum Powder)
 - Health Hazards Assessment
 - Occupational Health
 - Toxicology Effects (DARCOM)
 - Red Phosphorus - Butyl Rubber (RP-BR) Smoke (L8A1 Smoke Grenades), (Oiled Red Phosphorus, Methylene Chloride, White Phosphorus)
 - White Phosphorus - Felt Wedge (WP-FW) Smoke (XM825 Smoke Grenades/Projectiles)
 - Vaporization/Condensation Aerosols
 - Fog Oil Smoke (use only)
 - Diesel Fuel Smoke (use only)
 - Marking/Signaling Smokes
 - Green Smoke
 - Red Smoke
 - Yellow Smoke
 - Violet Smoke
 - Other Colored Smokes
 - Training Smokes
- Atomic Material
- Controlled Items
- Miscellaneous
- Technology Base
 - Field Artillery Ammunition Development (63628A)
 - Field Artillery Ammunition Development (D007)
 - Improved Conventional Ammunition (D276)
 - Tank Ammunition Development (63633A)
 - Tank Ammunition and Fuses (D161)
- Explosives
 - Primers
 - Pyrotechnics
 - Blastic Agents
 - Hazards of Blastic Agent Formulations/AEHA

continued-

Level 8 - continued

Fuses

Advanced Fuse Design (63613A)

Advanced Artillery & Mortar Fusing (DE55)

Fuse Components

Cartridge Cases

M205E1 152MM Skin Sensitizing Potential

Smokes & Obscurants

Combat Support Munitions (63627A)

Smoke Munitions and Material (DE82)

Training Smokes

Large Area Screening (LAS)

Infrared (IR) Screening

Microwave Screening

Multispectral Screening (MSS)

Millimeter Wave Screening

"One Way" Smokes

Projectiles

XM11 Projectile (SPAL)

Chemical & Biological Warfare

Chemical Warfare (Offense)

Lethal Chemical Munitions Concepts

Lethal Chemical Materiel (DE76)

Lethal Chemical Agent Process (DE77)

Lethal Chemical Munitions (64610A)

Chemical Protective Respirator

NBC Protective Mask

Multipurpose Mask for CBR Protection

Modular Collective Protective Equipment

M51 Collective Protective Shelter System

Decontaminating Equipment

Jet Exhaust

Station

Apparatus

500 Gal. APP Decontaminating, Skid Mounted

Training Devices

M8 Chemical Agent Alarm, Auto., Portable

Chemical Agent Detector

Binary CW Agents

Chemical Agents

Lethal Agents

Nerve Agents

GD Soman

GA Tabun

GB Sarin

VX ----

AR-55 ----

Blister Agents (Vesicants)

HD Mustard

CX Phosgene Oxime

HN Nitrogen Mustard

continued-

Level 8 - continued

- Arsenicals:
 - Choking Agents
 - CG Phosgene
 - Blood Agents
 - CK Cyanogen Chloride
 - AC Hydrocyanic Acid
 - Incapacitating Agents
 - Central Nervous System Depressants
 - BZ - (3-Quinuclidinol) Benzilic Acid
 - Cannabinols
 - Phenothiazines
 - Central Nervous System Simulants, Hallucinogenics
 - LSD D-lysergic acid diethylamide
 - Amphetamines
- Chemical Warfare (Defense)
 - Chemical Defense Materiel Concepts (63721A)
 - Individual Chemical Protection Materiel (DE80)
 - Mask
 - Rubber Formulations
 - Gloves
 - Respirator
 - Hood
 - Footware
 - Overgarment
 - Chemical Decontamination Materiel (DE81)
 - Apparatus
 - Skin
 - Patient
 - M258 Kit
 - Station
 - Agent decontamination solution toxicity testing
 - Collective Protection Materiel
 - Armored Vehicles (DJ30)
 - Chemical Detection and Warning Materiel (D60)
 - Collect Chemical Protection Materiel (D604)
 - Chemical Defense Materiel (64725A)
 - Chemical Defense Materiel (DF97)
 - Chemical (Biological Collective Protection (D017)
 - Individual Chemical Protection (D019)
 - Chemical Detection and Warning System (D020)
 - Collective Protection Materiel
 - Armored Vehicles (D023)
 - Training Systems for Chemical Defense (D138)
- Medical Aspects
 - Treatment
 - Simulant
- Biological Warfare (Defense)
 - Rapid ID of Agents/Diseases
 - Biological Agent Alarms

continued-

Level 8 - continued

Rapid Diagnosis Agents/Diseases

Lassa Fever
Ebola
BHF
KHF
Chikungunya
Rift Valley Fever
Toxins
Anthrax
Legionella
Pseudomallei
Q Fever
Junin Virus
Marburg Virus
Tick-Borne Encephalitis Complex
Dengue I
CHF
Biological Toxins
Viruses
Bacteria
Rickettsia
Toxins
Viruses
Toxins

Biological Defense Materiel (64724A)

Biological Defense Materiel (DF45)

Radiological Defense Equipment (64706A)

Ammunition Production Base Support

Achieve Cost Reductions and Enhance Health Safety and Energy

Conservation Characteristics

Active Production Support

Modernization Support

Radford AAP Restore Nitrocellulose Line C

Pine Bluff Arsenal

Automate Grenade Facility

Modernize Smoke Facility

Indiana AAP

81 Motar

105 MM

155 MM

8 inch Charge

Expansion Support

New Production Capability Support

New 155MM Propelling Charge, Indiana AAP

25 MM Bushmaster Ammunition, Lake City AAP

Metal Parts 105MM Tank Training Projectile, Indiana AAP

M483 Improved Conventional Munition, Mississippi AAP,

Bay St Louis, MS

continued-

Level 8 - continued

- Provisions for Industrial Facilities Binary Chemical Munitions
- Layaway of Industrial Facilities
- Manufacturing Technology Program
 - Pollution Engineering for 1983-85 Requirements (5794214)
 - Process Parameters for Prod Forming of Projectiles (5796681)
 - Improved Nitrocellulose Purification Process (5804341)
 - Nitroguanidine Process Optimization (5814061)
 - Others
- Military Adaption of Commercial Items
- Ammo Depot Plant Equipment Maintenance
- Industrial Emissions (Munition Plants)

Other Materiel

- Tactical & Support Vehicles
 - Trucks
 - Semi-trailers
 - Trailers of all Types
- Communications & Electronics
 - Fixed
 - Semi-fixed
 - Mobile Strategic Communications
 - Mobile Tactical Communications

Other

- Fuels Handling Equipment System (64717A)
- Fuels, Lubricants, Additives
 - Fuels and Equipment (63104A)
 - Synthetic Fuels & Alternative Fuels
 - Army Mobility Fuels (Synfuels)
 - Oil Shale Derived
 - Coal Derived
 - Biomass Derived
 - Tar Sands Derived
 - Army Installation/Stationary Synfuels
 - Army Engine System Developments
 - High Fuels Technology
 - Fuels and Munitions
 - Fuels as Agents
- Lubricants
- Additives
 - Fire Control Technology
 - Armored Vehicle Systems
 - Fuel Chemical Additives
 - Icing Inhibitors
 - Anti-oxidants
 - Corrosion Inhibitors
 - Lubricity Additives
 - Biocides
 - Static Dissipator Additives

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Level 8 - continued

Brake Fluids

Silicone Brake Fluids

Skin Toxicity (NERDCOM)/AEHA

Eye Toxicity (NERDCOM)/AEHA

Clothing, Equipment, Shelters

Clothing and Equipment Technology (62723A)

Shelters (62723A)

Clothing and Equipment (Support/Survivability) (63747A)

Combat Clothing and Equipment (64713A)

Clothing Soaps, Dyes

Clothing

Material

Textiles

Durable Press

Resin G-32 (NRDC)

Grifftex UB-46 (NRDC)

Aridry P (NRDC)

IIII Emulsion

Permafresh CFC

Fire-Retardants

P-YY (NRDC)

Polybenzimidazole (NRDC/AF, WPAFB)

THPOH/NH3 (NRDC)

Face Nets

Arctic Clothing

Rhoplex TR-96 (NRDC)

Dermal Toxicity/AEHA

Emulsion E-1552 (NRDC)

Dermal Toxicity/AEHA

Helmets

Body Armor

Spectacles

Gloves

Linurs

Non-irritating Fabric

Kevlar, 100% (NRDC)

Coveralls

Nomex E-22 (NRDC)

Dermal Toxicity/AEHA

Goggles

Sunglasses/Cases

HGU-4P

Dermal Toxicity (NRDC)/AEHA

Masks

M24/25 A1

Rubber Formulations

Dermal Toxicity (ARRADCOM)/AEHA

Mark V

Rubber Formulations

ARRADCOM/DARCOM

continued-

Level 8 - continued

- Shoes
- Socks
 - Hydrophilic Nylon Fiber (NRDC)
 - Dermal Toxicity/AEHA
- Soaps, Detergents Cosmetics
 - Soaps
 - Detergents
 - Cosmetics
- Dyes
- Oil Repellents
- Water Repellents
 - Clothing
 - Before Wash
 - After Wash
 - Norane 18 (NRDC)
 - Dermal Toxicity/AEHA
 - Auropel
 - EM
 - SP
 - Synthopel
 - QP
 - Noreno
 - F (NRDC)
- Leatherwear
 - FC-233 (NRDC)
 - Dermal Toxicity/AEHA
- Sleeping Bags
 - Batting
 - Polyester
 - Rhoplex TR-96 (NRDC)
 - Dermal Toxicity/AEHA
 - Emulsion E-1552 (NRDC)
 - Dermal Toxicity/AEHA
- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Water Quality Criteria (Field Army)
 - Water Supply Equipment Family
 - Drinking Water Containers
 - Drinking Water Drop Bags
 - Inner Liner
 - Reverse Osmosis Water Purification Unit
 - Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
 - Pesticides

continued-

Level 8 - continued

- New Chemicals
 - Permethrin (Subchronic Inhalation)/AEHA
- Disposal Unit
- Fungicides
 - Mattress Batting
 - Fire Retardant Resins
 - Tick & Flea Collars
- Rodenticides
 - New Chemicals
 - Disposal Unit
- Herbicides
- Preservatives
- Leather
 - Paranitrophenol (DARCOM)
 - Chronic Hazard/AEHA
- Wood
- Structural
- Stain Release Agents
- Military Clothing
- Sun Chemical
 - Prym 47 (NRDC)
 - Dermal Toxicity/AEHA
- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Material (A836)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)
 - Drugs, Vaccines, Repellents
 - Drugs and Vaccines Developments (63750A)
 - Bacterial
 - Meningococcal Meningitis
 - Bacillary Dysentery (Shigella)
 - Diarrhea (Escherichia coli)
 - Pseudomonas
 - Gonococcus
 - Viral
 - Dengue Fever
 - Sand Fly Fever
 - Hepatitis
 - Adenovirus
 - Rickettsia
 - Scrub Typhus
 - Parasitic
 - Malaria
 - Leishmaniasis
 - Antiradiation Drugs
 - Infection Prevention/Retardation Drugs Resulting from
 - Massive Trauma, Amputation and Burns
 - Antishock Drugs
 - Behavioral Science Research (61102A)

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Level 8 - continued

- Military Disease Hazards Technology (62770A)
 - Risk Assessment of Mil. Diseases (A870)
 - Prevention of Mil. Diseases (A871)
- Combat Casualty Treatment Technology (627724)
 - Military Research Animal Resources (A812)
 - Combat Casualty Treatment Technology (A874)
 - Medical Systems in Nonconventional Warfare (A875)
- Systems Health Prevention Technology (62777A)
 - Health Hazards of Mil. Materiel (A878)
 - Medical Factors Limiting (A879)
- Repellents
 - New Candidates
 - Louse Toxicant (Pediculicide)
 - Abate (0,0,0',0l-Tetramethyl-o-o'-thio-di-p-phenylene phosphorothioate) (AFPCB)
 - Malathion
 - Commercially-Available
 - Reformulations
 - New Polymer Formulations
 - Controlled-Release Additives
 - Insecticide
 - Propellent
 - Pyrethroil (AFPCB)
 - DEET Acute Inhalation
 - Subchronic Inhalation
 - Behavioral
 - Diethyl Metatoluamide (AFPCB)
 - Chronic
 - 3-(phenoxyphenyl) methyl (±)-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclo-propane carboxylate (Permethrin) (AFPCB)
 - (5-Benzyl-3-furyl)Methyl-2,2-Dimethyl-3-(2-Methylpropenyl) Cyclo panecarboxylate (Resmethrin) (AFPCB)
 - Toxicological Hazards/AEHA
- Medical/Dental Device
 - Medical Devices
 - Combat Maxillofacial Injury and Materiels (62775A)
 - Protective Devices
 - Moldable Polymeric Material
 - Spray-on Bandages (biodegradable, biocompatible, with nemostasis, antiseptis, anesthesia properties)
 - Artificial Skin and Contouring Material
 - Esophageal/Tracheal Transplant Materials
 - Microencapsulated Antibiotics
 - Permanent Implants
 - Various Vascular Grafts
 - Orthopaedic Implants
 - Implants for Cosmetic Reconstruction
 - Artificial Organs
 - Heart Valves

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Level 8 - continued

- Implants in Contact with Mucosal Tissue
 - Artificial Eyes
 - Dentures
 - Intrauterine Devices
 - Certain Types of Catheters
- Corrective, Protective and Supportive Devices
 - Splints
 - Braces
 - Films
 - Protective Clothing
- Collection and Administration Devices
 - Blood Transfusion Sets
 - Various Types of Catheters
 - Dialysis Units
 - Hypodermic Devices
 - Other Injection Devices
- Storage Devices
 - Bags or Other Containers for Blood
 - Blood Products
 - Diagnostic Agents
- Dental Devices
 - Dental Diseases
 - Dental Materials
 - Biocompatible Tooth Implants
 - Artificial Bone Implant Materials
 - Beryllium Castings
 - Beryllium Grindings
- Chemical Warfare (Defense)
 - Prophylaxis Drugs
 - Defense System CW/BW Research (61102A)
 - Chemical/Biological Defense Investigations (62706A)
 - Medical Defense Against Chemical Weapons (62734A)
- Basic Toxicology Research
 - Extrapolation of Data
 - Interspecies (From Animal to Man)
 - Intraspecies (Man to Man Incorporating Population Considerations)
 - Low to High Concentrations
- Other
 - Chemicals Used to Extend Life to Whole Blood for Transfusions
 - Blood Replacements
 - Anesthetics
 - Operating Room
 - Dental Clinic
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Training Exercises
 - Pollution Abatement Process Technology Research (61102A)

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Level 8 - continued

- Installation Effluents
 - Army Posts
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - Army Ammunition Plant (MBRDL)
 - TNT Wastewaters Toxicity
 - Pink Water
 - Condensate Water
 - RDX L 1,3,5 Trinitrohexahydro-1,3,5-Triazine)
 - 2,4-DNT
 - TNT (Trinitrotoluene)
 - Inhalation
 - Oral
 - DCPD (Dicyclopentadiene)
 - DIM P (Di isopropyl methyl phosphonate)
 - Identification of Health Effects of Mil. Pollutants (A835)
 - Environmental Quality of Construction and Operation (A896)
 - Environmental Quality R&D (D048)
 - TRADOC Studies & Analyses (65102A)
 - TRADOC Studies & Analyses (M980)
 - Support of Development Testing (65702A)
 - Test Design & Evaluation (D026)
 - Field Smoke Assessment (D204)
 - Aircraft Development Test Activity (D618)
 - Matériel Systems Analysis (65706A)
 - US Army Matériel Systems Analysis (M541)
 - Exploitation of Foreign Items (65709A)
 - Exploitation of Foreign Items (D650)
 - Support of Operational Testing (65712A)
 - Test Boards (DV02)
 - Evaluation of Matériel Concepts (D985)
 - Foreign Weapons Evaluation (65714A)
 - Program-Wide Activities (65801A)
 - DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
 - DOD Munitions Effectiveness (D620)
 - Explosive Safety Standards (M857)
- Other Support Equipment
 - Combat Support Equipment (63726A)
 - General Support Equipment (DK39)
 - Combat Support Equipment
 - Tactical Bridging
 - Shop Sets
 - Construction Equipment
 - Floating & Rail Equipment
 - Generators & Associated Equipment
 - Material Handling Equipment
 - Medical Support Equipment
 - Special Equipment
 - User Testing
 - Nonsystem Training Devices

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Level 8 - continued

Support Equipment Facilities

Military Policy

Riot Control Agents

Material

Military Inventory

Hazard to Military Personnel/AEHA

Tier 1, 2,

AI3-36323

AI3-36332

AI3-35765

AI3-36110

AI3-33019a

AI3-36317a

AI3-36383

AI3-36406

AI3-36423

AI3-36424

AI3-36436

AI3-36437

AI3-36439

AI3-36440

AI3-36466

AI3-36468

AI3-70735aGa

AI3-37128a

AI3-37129a

AI3-37134a

AI3-37136a

AI3-37137a

AI3-37138a

AI3-37139a

AI3-37406a

AI3-37407a

AI3-37408a

AI3-37409a

AI3-37410a

AI3-37411a

AI3-37416a

AI3-36329a

AI3-37518

AI3-37520

AI3-37522

AI3-35765E

AI3-37413a

AI3-37421a

AI3-37423a

AI3-37424a

AI3-37425a

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Level 8 - continued

AI3-37427a

AI3-37432a

AI3-20827c

AI3-37435a

AI3-37436a

AI3-37437a

AI3-37439a

AI3-37440a

AI3-37441a

AI3-37442a

AI3-37444a

AI3-37446a

AI3-34960b

AI3-37528a

Topical Health Hazards (AEHA)

Dermal, Irritation, Rabbits

A13-36526

A13-36318b

A13-34804

A13-5974

A13-31534a

A13-33575b

A13-12078

A13-33514a

A13-36414

A13-8010

A13-32840

A13-36378

A13-36327

A13-36375

A13-36415

A13-36419

A13-36422

A13-36028

A13-36374

A13-35966

A13-36543

A13-36541aGa

A13-36331

A13-36333

A13-37024a

A13-37025a

A13-37026a

A13-37028a

A13-37031a

A13-37034a

A13-37036a

A13-37037a

A13-37038a

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Level 8 - continued

A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698a
A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Ocular, Irritation, Rabbits

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a
A13-37031a
A13-37034a
A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223

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Level 8 - continued

A13-37226
A13-36465
A13-36388
A13-36698a
A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Photochemically Induced Dermal Irritation, Rabbits

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a
A13-37031a
A13-37034a
A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223
A13-37226
A13-36465

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Level 8 - continued

A13-36388
A13-36698a
A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a
Approximate Oral Toxicity, Rats
A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a
A13-37031a
A13-37034a
A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698a

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Level 8 - continued

A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Dermal Sensitization, Guinea Pigs

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a
A13-37031a
A13-37034a
A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698a
A13-36696
A13-36699

continued-

Level 8 - continued

A13-36401	
A13-36697a	
A13-16738	
A13-37027a	
A13-37029a	
A13-37033a	
Toxicology Evaluations (Work Units) AEHA, 1978	
LD ₅₀ Rats and Rabbits	202
Approximate Lethal Dose - Acute - Rats and Rabbits	219
30-Day Alternate Feeding Study	30
Guinea Pig Sensitization Test	890
Rabbit Wear Test - 24-Day	67
Prenatal Toxicity - Adult Rat	295
Prenatal Toxicity - Rat Fetuses	2,572
Inhalation - Hazard Evaluation - Saturated Vapor	54
Inhalation Acute Short Term - Rat, Quail and Rabbit	263
Inhalation Subchronic	620
Literature Searches and Reviews	135
Prothrombin Time - Samples	98
Blood Gas Analysis	100
Rapid Avoidance - Rat	217
Enzyme Induction - Rat	604
Activity Drum, Rat	246
Physiological Measurements	80
Atmospheric Sample Collection	1,584
Photosensitization	139
Subchronic Ingestion	32
Shuttlebox Avoidance, Rodent	870
Long Term Activity Monitor, Rodent	300
Sidman Avoidance, Rodent	16
Passive Avoidance, Rodent	239
Air Blast Escape, Rodent	2
Swimming Endurance and Coordination, Rodent	12
Beam and Grid Balance and Coordination, Rodent	151
Photoirritation Skin Study	276
Counted Asbestos Fiber Samples	554
Total	10,867

Pathology and Animal Care Work Units, AEHA, 1978

Primary Irritation Evaluation Skin - Rabbits	406
Primary Irritation Evaluation Eye - Rabbits	484
Necropsy	1,398
Histopathology - Tissues Processed	30,072

continued-

Level 8 - continued

Histopathology - Tissues Evaluated	22,343
Complete Blood Counts	482
Differential Blood Counts	482
Coulter Counter Standards	308
Fecal Analysis	20
Urinalysis	311
Animals Weaned - Rats	5,906
Radioactive Treatment, Animals	64
Radioactive Sample Determinations	1,296
EM Tissues Processed	338
EM Thin Prep	180
EM Plates Processed	216
EM Prints Prepared	50
	Total
Others	64,356
p-Chlorophenyl Methyl Sulfide	
p-Chlorophenyl Methyl Sulfoxide	
p-Chlorophenyl Methyl Sulfone	

AD-A113 048

LIFE SYSTEMS INC CLEVELAND OH

F/G 6/20

MAMMALIAN TOXICOLOGY TESTING: PROBLEM DEFINITION STUDY, GLOBAL —ETC(U)

MAR 81 R A WYNVEEN

DAMD17-81-C-1013

UNCLASSIFIED

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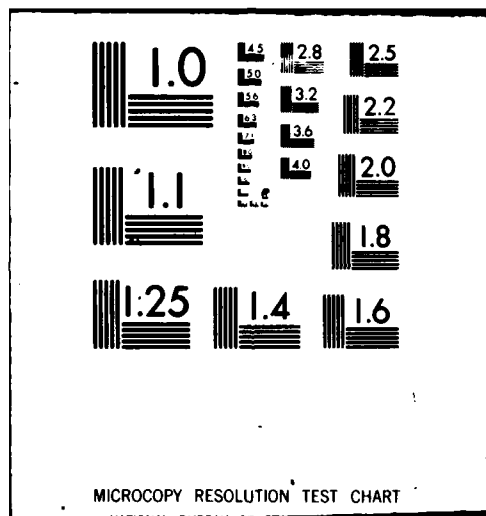


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4-8-81

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REQUIREMENTS CATEGORIES (LEVEL 9)

Aircraft (& Related Equipment)

Fixed Wing

C-12A	----	Cargo Airplane
RC-12	Guardrail	Cargo Airplane
OV-1	Mohawk	Reconnaissance/Surveillance Airplane
RV-1,D	Mohawk	Reconnaissance/Surveillance Airplane
----	RPV	Remotely Piloted Vehicle

Helicopter

EH-60A	----	
AH-1G	Cobra	Attack Helicopter
AH-1Q,S	Cobra/TOW	Attack Helicopter
CH-47C,D	Chinook	Transport Helicopter (Medium Lift) (64213A)
UH-60A	Black Hawk	Utility Transport Helicopter (64206A)
AH-64	Black Hawk	Attack Helicopter
YAH-64	AAH	Advanced Attack Helicopter (64207A)
U-21	----	
CH-54 ^(a)	Tarhe	Heavy-Lift Helicopter
OH-58	Kiowa	Light Observation Helicopter
UH-1,H ^(a)	Huey	Utility Helicopter ^(b) (64215A)
CH-58B ^(a)	Tarhe	Heavy-Lift Helicopter
OH-6A	Cayuse	Light Observation Helicopter
EH-1H	----	Electronic Helicopter
----	ASH	Advanced Scout Helicopter

Technology Base

- Propulsion Technology (62209A)
- Aircraft Power Plants/Propulsion (63201A)
- Air Mobility Support (63209A)
 - Manufacturing Technology (DB31)
 - Aviation Life Support (DB45)
 - Helicopter Anti-De-Icing (D103)
- Air Mobility Support Equipment (64204A)
 - Aviation Life Support System (DC45)
- Army Helicopter Improvement Program (64220A)
 - Army Helicopter Improvement Program (D518)

Safety

- Air Worthiness
 - Mid-air collision
 - Carbon Fiber Exposure
 - Carbon Fiber Health Hazard
 - Acute Inhalation Exposure/AEHA
 - Delayed Hazard/AEHA
 - Project HANS, Carbon Fibers
 - in Simulated Jet Plan Accident/AEHA

Missiles (& Related Equipment)

Surface-to-Air

MIM72-A/C Chaparral	Forward Air-Defense Missile (23730A)
Rocket	
Motor	

continued-

Level 9 - continued

Smokeless Propellant System
Exhaust Products/Gas Emissions
Toxic Hazards
Gunners
Incidental Personnel

MIM23-B	Hawk	Improved Air-Defense Missile System
----	Roland	Forward Air-Defense Missile (64309A)
----	Patriot (SAM-D)	Tactical Air Defense System (64307A)
----	Patriot (SAM-D)	ECCM Enhancement
----	Nike-Hercules	Air Defense Missile (c)
----	Vulcan	Air-Defense Gun
----	DIVAD	Division Air-Defense Gun
----	Redeye	Portable Antiaircraft Missile
----	Shillelagh (d)	
----	Stinger	Portable Antiaircraft Missile (64306A)
Air-to-Surface		
----	Hellfire	Antiarmor Modular Missile System (64310A)
----	Grass Blade (d)	(64313A)
----	LCSS (d)	
Surface-to-Surface		
Antitank/Assault		
FGM77A	Dragon	Medium Antitank Missile
BGM71A	TOW	Heavy Antitank Missile
MGM52C	Lance	Battlefield Support Missile
MGM31A	Pershing Ia (e)	Battlefield Support Missile
MGM31	Pershing II	Battlefield Support Missile (64311A)
MGRIB	Honest John	Unguided Artillery Rocket
MLRS	----	Multiple-Launch Rocket System
----	Viper	Light Antitank Weapon
----	Viper	Improvement Lightweight Antitank Weapon (64623A)
----	LAW	Antitank Rocket (f)
Technology Base		
Propulsion		
	Solid Rocket Fuel System Propellants	
	Aeronautical Propulsion Technology (62303A)	
	New Propellants	
	Fast Burning Propellants	
	Ultra-fast Burning Rate Propellants	
	Carboranyl Methyl Propionate	
	Toxicological Evaluation/AEHA	
	Propellant Mixtures	
	Stabilizing Component	
	Ethyl Centralite (ARRCOM)	
	Toxic Hazard/AEHA	
Safety & Survivability		
M72	Coperhead	Cannon-Launched Guided Projectile (64621A)
XM736	----	Binary Projectile
	High Energy Laser Research (62303A)	
	High Energy Laser Research (62307A)	
	High Energy Laser Components (63314A)	
	Heavy Antitank/Assault Weapon - TOW (23724A)	
	Corp Support Weapon System (63320A)	

continued-

Level 9 - continued

Nuclear Munitions and Radiacs (63604A)
 Nuclear Effects Support Team (D153)
 Anti-Tank Guided Missiles Improvement
 ATGM Improvements (D097)
 Ground Support Rocket System (GSRS)

Weapons and Tracked Combat Vehicles (& Related Equipment)

Weapons/Other Vehicles

Mobile Weapons/Other Vehicles

Mobile Weapons

Self-Propelled

AntiTank

M56

Gun

M42, A1

M107 (T235E1)

Howitzer

M37

M44, A1

M52, A1

M55 (T108)

M107 ----

Self-Propelled 175MM Gun

M108

M109

M110 (T236E1), A2 ---- Self-Propelled 8" Heavy
Howitzer

M109A2 ---- Self-Propelled 155MM Howitzer

Mortar

M29 81MM

Mortar

M30 4.2 In

Heavy Mortar

M84

M106, A1

M125A1 ----

81MM Mortar Carrier

M224 60MM

Lightweight Company Mortar

XM252 81MM

Mortar

Armored Machine Gun

XM253 ----

81MM Mortar

M224 ----

Lightweight Company Mortar

M240 ----

Armored Machine Gun

50 Cal. Mount Machine Gun
(for CFV)

---- Master

Vehicle Rapid Fire Weapon
System

---- ESPAWS

Enhanced Self-Propelled
Artillery Weapon

Mines

Ground-Emplaced Mine - Scattering System (GEMSS)

Modular Pack Mine System (MOPMS)

M16A2 Antipersonnel Mine

M18A1 Claymore Antipersonnel Mine

continued-

Level 9 - continued

Towed

Gun

M59

Howitzer

M1A1

M45

M52

M101,A1 ---- 105MM

M102 ---- 105MM

M114,A1 ---- 155MM

M115

M116

M123,A1

M126

M137

M138

XM179

M198 ---- 155M Medium Towed Howitzer

M14A2 ---- 155M Towed Howitzer

M102 ---- 105MM Towed Howitzer

M101A1 ---- 105MM Towed Howitzer

Other Weapons

Flame Thrower

M132,A1

---- ITV TOW Vehicle

---- Fighting Portable Weapon (for IFV)

---- Smoke Grenade Launcher

---- Staff Smart, Target-Activated Fire-and-Forget

Tactical ECM System (63755A)

Protective Electronic Warfare Equipment (D251)

Tactical ECM System (64750A)

Protective Electronic Warfare Equipment (D540)

High Energy Electromagnetic Radiation Weapons (e.g., Lasers)

Individual Weapons

Personal Defense Weapons

M1911 A1

Model 459, S & W

Model 459A, S & W

M59

SSP, Colt

925-1

1935 Browning

M28

P95

VP-70

PSP

Others

Safety of Lubricants Used in Small
Arms/AEHA

Rifles

M14

M21

continued-

Level 9 - continued

- Accurate Rifle System
- M16 A1
- Advanced Rifle
- Individual Weapons Sights
 - AN/PVS-4
 - AN/PVS-2
 - AN/PVS-5A
 - Low Cost Night Vision Aids
 - AN/PAQ-4 Infrared Aiming Light
- Hand Grenades
 - M33 Series
 - M67
 - AN-M14 Incendiary
 - M18 Smoke
 - Red
 - Green
 - Yellow
 - Violet
 - AN-M8 Smoke
 - HC Smoke (105-150 Sec.)
- Infantry Support Weapons
 - Squad Automatic Weapons
 - XM248
 - XM249
 - XM106
 - XM262
 - M60 General Purpose Machine Gun
 - M2HB 0.50-Caliber Heavy Machine Gun
 - Grenade Launchers
 - M203
 - M79
 - 30-MM Multi-Shot
 - Rifleman's Assault Weapon
 - M202A1 Rocket Launcher
 - TOW Heavy Antitank Missile
 - M40A2 106MM Recoilless Rifle
 - M47 Dragon Medium Antitank Missile
 - Infantry Manportable Anti-Armor Assault Weapon System
 - M67 90 MM Recoilless Rifle
 - M72A2 66 MM Light Antitank Weapon
- Physiological Effects
 - Low-Level Effects on Vision (Primates)
 - Chronic Low-Level Effects (Primates)
 - Human Visibility Testing System Development
 - Protection Concepts and Recommendations
 - Hazard Analysis
 - Exposure Standards
 - Predictive Models

continued-

Level 9 - continued

Health Effects
Ocular Effects (Visible Near IR, Far IR, Near
Millimeter)
Ocular Protection (Training and Tactical)
Mechanism of Laser/Tissue Interaction
Technology Base
MSL/H1 Energy Laser Research (61102A)

Other Vehicles
Bulldozer, Armored Vehicle
M5
M6
M8
XM11 (M113A1)
Car, Armored Vehicle
M8
M706
XM706
E1
Cargo, Armored Vehicle
M548
Tractor, Armored Vehicle
M4, A1, A1C, A2, C
M5, A1, A2, A3, A4
M6
Utility Armored Vehicle
M39
Vehicle Launched Bridge, Armored Vehicle
AVLB
Ammo Support Vehicle
---- FAASV Field Artillery Ammunition Support
Vehicle
Other Combat Vehicles
---- ---- Combat Vehicle HD REF(?)
---- HMMWW High Mobility, Multipurpose Wheeled
Vehicle
Ambulance, 3/4 ton
M43 Series

Portable Weapons/Ordnance
Technology Base

Tracked Combat Vehicles
Main Battle Tanks
M1 Abrams Combat (Main Battle) Tank (105MM) (64620A)
M1 Tank Improvements Program (23735A)
M4A3
M24 (Light)
M26
M41, A1, A2, A3
M48, A1, A2, A2C, A3C ---- Main Battle Tank
M60, A1, A1E2, A2, A3 ---- Main Battle Tank (105MM)
M60A1 Product Improvement Program (23735A)
M64, A1

continued-

Level 9 - continued

M103,A1		
MBT-70		
XN-70		
XM803		
Air-Defense Gun Carrier		
M741 ⁽⁸⁾	----	Armored Air-Defense Gun Carrier (Vulcan)
Self-Propelled Artillery		
Armored Command Post Vehicle		
M557A1 ⁽⁸⁾	----	Armored Command Post Vehicle
Armored Recovery Vehicles		
M32,A1B3		
M51		
M88A1	----	Medium Recovery Vehicle
M578		
XM696 (M548)		
Armored Personnel Carriers		
M59		
M75		
M113,A1,A2	----	Armored Personnel Carrier ^(h)
M125,A1		
XM 163		
XM 667E1		
XM668E1		
XM727		
XM730		
XM741		
XM754		
XM765		
Armored Reconnaissance Vehicles		
M114A1 ⁽¹⁾		
M551	Sheridan	Armored Reconnaissance Vehicle
XM800		
Armored Cargo Carriers		
M548 ⁽⁸⁾	----	Armored Cargo Carrier/SLUFAE Launcher
Armored Combat Engineer Vehicles		
M728		
Armored Missile Carrier		
M667 ⁽⁸⁾	----	Armored Lance Missile Carrier
M727 ⁽⁸⁾	----	Armored Hawk Missile Carrier
M730 ⁽⁸⁾	----	Armored Chaparral Missile Carrier
M901 ⁽⁸⁾	ITV	Armored Improved TOW Vehicle
M485A	----	Armored DIVAN Gun System
Fighting Vehicle System (IFV-CFV-FUS) (64616A)		
Infantry Fighting Vehicle (IFV) (64616A)		
M2	IFV ^(j)	Armored Infantry Fighting Vehicle ^(k)
Calvary Fighting Vehicle (CFV) (64629A)		
M3 ⁽¹⁾	CFV ^(j)	Armored Calvary Fighting Vehicle ⁽ⁱ⁾
Technology/Base		
Tank and Automotive Survivability Technology (62601A)		
Artillery Armament Systems (62603A)		
Advanced Artillery System Test Beds (62603A)		

continued-

Level 9 - continued

Munitions Technology (62603A)
Training Munitions (62603A)
Chemical Munitions (62622A)
Advanced Land Mobility System Concepts (63602A)
 Combat Vehicle Technology (D118)
 High Survivability Test Vehicle (D188)
Combat Vehicle Propulsion System (63621A)
 Combat Vehicle Engine (D607)
Advanced Diesel Engine (63626A)
High Mobility MP Wheeled Vehicle (64624A)
Fire Support Team (FIST) Vehicle (64626A)
---- HSTV-L High-Survivability Test Vehicle - Lightweight
---- HIGAM High Mobility/Agility Combat Test Vehicle
---- OSRS General Support Rocket System

Ammunition (& Related Materiel)

Ammunition

Conventional Munitions (Over 50 types)

Tank Ammunition
Fuses (over 1,100 types)
 M734 Multi-option Fuse
Artillery Ammunition
Propelling Charges
Small Arms Ammunition
Mortar Ammunition
Rockets
Other

Munition Related Chemicals

Renovation

Proveout

Smokes & Obscurants

Infantry Support Systems (64601A)

Smoke Mortar Rounds (D144)

Standard Munitions

Hexachloroethane (HC) Smoke Mixture (Zinc Oxide and
Aluminum Powder)

Health Hazards Assessment

Occupational Health

Toxicology Effects (DARCOM)

Route of Exposure

Dermal

Oral

Inhalation

Acute Toxicity/AEHA

Oral

Dermal Irritation

Ocular Irritation

Red Phosphorus - Butyl Rubber (RP-BR) Smoke (L&A1 Smoke
Grenades), (Oiled Red Phosphorus, Methylene Chloride,
White Phosphorus)

White Phosphorus - Felt Wedge (WP-FW) Smoke (X1825 Smoke
Grenades/Projectiles) (8)

continued-

Level 9 - continued

- Vaporization/Condensation Aerosols
 - Fog Oil Smoke (use only)
 - Diesel Fuel Smoke (use only)
- Marking/Signaling Smokes
 - Green Smoke
 - Red Smoke
 - Yellow Smoke
 - Violet Smoke
 - Other Colored Smokes
- Training Smokes
- Atomic Material
- Controlled Items
- Miscellaneous
- Technology Base
 - Field Artillery Ammunition Development (63628A)
 - Field Artillery Ammunition Development (D007)
 - Improved Conventional Ammunition (D276)
 - Tank Ammunition Development (63633A)
 - Tank Ammunition and Fuses (D161)
- Explosives
 - Primers
 - Pyrotechnics
 - Blastic Agents
 - Hazards of Blastic Agent Formulations/AEHA
- Fuses
 - Advanced Fuse Design (63613A)
 - Advanced Artillery & Mortar Fusing (DE55)
 - Fuse Components
 - Cartridge Cases
 - M205E1 152MM Skin Sensitizing Potential
- Smokes & Obscurants
 - Combat Support Munitions (63627A)
 - Smoke Munitions and Material (DE82)
 - Training Smokes
 - Large Area Screening (LAS)
 - Infrared (IR) Screening
 - Microwave Screening
 - Multispectral Screening (MSS)
 - Millimeter Wave Screening
 - "One Way" Smokes
- Projectiles
 - XM11 Projectile (SPAL)
- Chemical & Biological Warfare
 - Chemical Warfare (Offense)
 - Lethal Chemical Munitions Concepts
 - Lethal Chemical Materiel (DE76)
 - Lethal Chemical Agent Process (DE77)
 - Lethal Chemical Munitions (64610A)
 - Chemical Protective Respirator
 - NBC Protective Mask
 - Multipurpose Mask for CBR Protection

continued-

Level 9 - continued

Modular Collective Protective Equipment
M51 Collective Protective Shelter System
Decontaminating Equipment
 Jet Exhaust
 Station
 Apparatus
 500 Gal. APP Decontaminating, Skid Mounted
Training Devices
 M8 Chemical Agent Alarm, Auto., Portable
Chemical Agent Detector
Binary CW Agents
Chemical Agents
 Lethal Agents
 Nerve Agents
 GD Soman
 GA Tabun
 GB Sarin
 VX ----
 AR-55 ----
 Blister Agents (Vesicants)
 HD Mustard
 CX Phosgene Oxime
 HN Nitrogen Mustard
 Arsenicals:
 L Lewisite (chlorovinyldichloroarsine)
 - Phenyldichloroarsine
 - Ethyldichloroarsine
 - Methyldichloroarsine
 Choking Agents
 CG Phosgene
 Blood Agents
 CK Cyanogen Chloride
 AC Hydrocyanic Acid
Incapacitating Agents
 Central Nervous System Depressants
 BZ - (3-Quinuclidinol) Benzoic Acid
 Dimethyl Methyl Phosphonate
 Trimethyl Phosphonate, Fluoride Ion
 2,4,6-Trichloroantoin
 Picric Acid
 Aniline
 N,N-Dimethyl aniline
 Diethylenetriamine
 4-Hydroxylamino,2,6-Dinitrotoluene
 2-Hydroxylamino,-4,L-Dinitrotoluene
 2,4,6 Trinitrobenzaldehyde
 1,1-Dimethyl Hydrazine
 - Cannabinoids
 - Phenothiazines
 Central Nervous System Stimulants, Hallucinogenics
 LSD D-lysergic acid diethylamide
 - Amphetamines

Level 9 - continued

Chemical Warfare (Defense)
Chemical Defense Materiel Concepts (63721A)
Individual Chemical Protection Materiel (DE80)
Mask
Rubber Formulations
Dermal Toxicity/AEHA
Human Patch
Gloves
Respirator
Hood
Footware
Overgarment
Chemical Decontamination Materiel (DE81)
Apparatus
Skin
Patient
M258 Kit
Station
Agent decontamination solution toxicity testing
Collective Protection Materiel
Armored Vehicles (DJ30)
Chemical Detection and Warning Materiel (D60)
Collect Chemical Protection Materiel (D604)
Chemical Defense Materiel (64725A)
Chemical Defense Materiel (DF97)
Chemical (Biological Collective Protection (D017)
Individual Chemical Protection (D019)
Chemical Detection and Warning System (D020)
Collective Protection Materiel
Armored Vehicles (D023)
Training Systems for Chemical Defense (D138)
Medical Aspects
Treatment
Simulant
Biological Warfare (Defense)
Rapid ID of Agents/Diseases
Biological Agent Alarms
Rapid Diagnosis Agents/Diseases
Lassa Fever
Ebola
BHF
KHF
Chikungunya
Rift Valley Fever
Toxins
Anthrax
Legionella
Pseudomallei
Q Fever
Junin Virus

continued-

Level 9 - continued

Marburg Virus
Tick-Borne Encephalitis Complex
Dengue I
CHF
Biological Toxins
Viruses
Bacteria
Rickettsia
Toxins
Viruses
Toxins

Biological Defense Materiel (64724A)
Biological Defense Materiel (DF45)
Radiological Defense Equipment (64706A)

Ammunition Production Base Support

Achieve Cost Reductions and Enhance Health Safety and Energy
Conservation Characteristics
Active Production Support
Modernization Support

Radford AAP Restore Nitrocellulose Line C
Pine Bluff Arsenal
Automate Grenade Facility
Modernize Smoke Facility

Indiana AAP
81 Motar
105 MM
155 MM
8 inch Charge

Expansion Support

New Production Capability Support

New 155MM Propelling Charge, Indiana AAP
25 MM Bushmaster Ammunition, Lake City AAP
Metal Parts 105MM Tank Training Projectile, Indiana AAP
M483 Improved Conventional Munition, Mississippi AAP,
Bay St Louis, MS

Provisions for Industrial Facilities Binary Chemical Munitions

Layaway of Industrial Facilities

Manufacturing Technology Program

Pollution Engineering for 1983-85 Requirements (5794214)
Process Parameters for Prod Forming of Projectiles (5796681)
Improved Nitrocellulose Purification Process (5804341)
Nitroguanidine Process Optimization (5814061)
Others

Military Adaption of Commercial Items

Ammo Depot Plant Equipment Maintenance

Industrial Emissions (Munition Plants)

Other Materiel

Tactical & Support Vehicles

Trucks

Semi-trailers

Trailers of all Types

continued-

Level 9 - continued

Communications & Electronics

Fixed

Semi-fixed

Mobile Strategic Communications

Mobile Tactical Communications

Other

Fuels Handling Equipment System (64717A)

Fuels, Lubricants, Additives

Fuels and Equipment (63104A)

Synthetic Fuels & Alternative Fuels^(m)

Army Mobility Fuels (Synfuels)

Oil Shale Derived

Coal Derived

Biomass Derived

Tar Sands Derived

Army Installation/Stationary Synfuels

Army Engine System Developments

High Fuels Technology

Fuels and Munitions

Fuels as Agents

Lubricants

Additives

Fire Control Technology⁽ⁿ⁾

Armored Vehicle Systems

Fuel Chemical Additives

Icing Inhibitors

Anti-oxidants

Corrosion Inhibitors

Lubricity Additives

Biocides

Static Dissipator Additives

Brake Fluids

Silicone Brake Fluids

Skin Toxicity (NERDCOM)/AEHA

Eye Toxicity (NERDCOM)/AEHA

Clothing, Equipment, Shelters

Clothing and Equipment Technology (62723A)

Shelters (62723A)

Clothing and Equipment (Support/Survivability) (63747A)

Combat Clothing and Equipment (64713A)

Clothing Soaps, Dyes

Clothing

Material

Textiles

Durable Press

Resin G-32 (NRDC)

Dermal Toxicity/AEHA

Grifftex UB-46 (NRDC)

Dermal Toxicity/AEHA

continued-

Level 9 - continued

Aridry P (NRDC)
Dermal Toxicity/AEHA
IIII Emulsion
Dermal Toxicity/AEHA
Permafresh CFC
Dermal Toxicity/AEHA
Fire-Retardants
P-YY (NRDC)
Dermal Toxicity
Polybenzimidazole (NRDC/AF, WPAFB)
Dermal Toxicity (AEHA)
THPOH/NH3 (NRDC)
Dermal/Toxicity/AEHA
Face Nets
Arctic Clothing
Rhoplex TR-96 (NRDC)
Dermal Toxicity/AEHA
Emulsion E-1552 (NRDC)
Dermal Toxicity/AEHA
Helmets
Body Armor
Spectacles
Gloves
Linurs
Non-irritating Fabric
Kevlar, 100% (NRDC)
Dermal Toxicity/AEHA
Coveralls
Nomex E-22 (NRDC)
Dermal Toxicity/AEHA
Goggles
Sunglasses/Cases
HGU-4P
Dermal Toxicity (NRDC)/AEHA
Masks
M24/25 A1
Rubber Formulations
Dermal Toxicity (ARRADCOM)/AEHA
Mark V
Rubber Formulations
ARRADCOM/DARCOM
Candidate 1
Dermal Toxicity
Candidate 2
Dermal Toxicity
Candidate 3
Dermal Toxicity
Candidate 4
Dermal Toxicity
Candidate 5
Dermal Toxicity

continued-

Level 9 - continued

- Shoes
- Socks
 - Hydrophilic Nylon Fiber (NRDC)
 - Dermal Toxicity/AEHA
- Soaps, Detergents Cosmetics
 - Soaps
 - Detergents
 - Cosmetics
- Dyes
- Oil Repellents
- Water Repellents
- Clothing
 - Before Wash
 - After Wash
 - Norane 18 (NRDC)
 - Dermal Toxicity/AEHA
 - Auropel
 - EM
 - Dermal Toxicity/AEHA
 - SP
 - Dermal Toxicity/AEHA
 - Synthopel
 - QP
 - Dermal Toxicity/AEHA
 - Noreno
 - F (NRDC)
 - Dermal Toxicity/AEHA
- Leatherwear
 - FC-233 (NRDC)
 - Dermal Toxicity/AEHA
- Sleeping Bags
 - Batting
 - Polyester
 - Rhoplex TR-96 (NRDC)
 - Dermal Toxicity/AEHA
 - Emulsion E-1552 (NRDC)
 - Dermal Toxicity/AEHA
- Food
 - Irradiated Food for Unlimited Human Consumption
 - Food Contaminated by Insects, Toxicity Testing
 - JT Food Service System Technology (62724A)
 - Advanced Food Development (63747A)
 - Combat Feeding, Wholesomeness Testing of Irradiated Foods (64713A)
- Water & Sanitation
 - Water
 - Water Quality Criteria (Field Army)
 - Water Supply Equipment Family
 - Drinking Water Containers
 - Drinking Water Drop Bags
 - Inner Liner
 - Polyurethane Film
 - MP-1880, CRG (NRDC)
 - Toxicity/AEHA

Level 9 - continued

- Reverse Osmosis Water Purification Unit
- Sanitation
- Pesticides, Fungicides, Rodenticides, Herbicides
- Pesticides
 - New Chemicals
 - Permethrin (Subchronic Inhalation)/AEHA
 - Disposal Unit
- Fungicides
 - Mattress Batting
 - Fire Retardant Resins
 - Tick & Flea Collars
- Rodenticides
 - New Chemicals
 - Disposal Unit
- Herbicides
- Preservatives
- Leather
 - Paranitrophenol (DARCOM)
 - Chronic Hazard/AEHA
- Wood
- Structural
- Stain Release Agents
- Military Clothing
- Sun Chemical
 - Pym 47 (NRDC)
 - Dermal Toxicity/AEHA
- Medical/Dental Materiel and Technology
 - Combat Medical Materiel (63732A)
 - Combat Medical Material (A836)
 - Combat Medical Materiel (64717A, D832)
 - Military Disease, Injury and Health (61102A)
 - Drugs, Vaccines, Repellents
 - Drugs and Vaccines Developments (63750A)
- Bacterial
 - Meningococcal Meningitis
 - Bacillary Dysentery (Shigella)
 - Diarrhea (Escherichia coli)
 - Pseudomonas
 - Gonococcus
- Viral
 - Dengue Fever
 - Sand Fly Fever
 - Hepatitis
 - Adenovirus
- Rickettsia
 - Scrub Typhus
- Parasitic
 - Malaria
 - Leishmaniasis
- Antiradiation Drugs

continued-

Level 9 - continued

- Infection Prevention/Retardation Drugs Resulting from Massive Trauma, Amputation and Burns
- Antishock Drugs
- Behavioral Science Research (61102A)
- Military Disease Hazards Technology (62770A)
 - Risk Assessment of Mil. Diseases (A870)
 - Prevention of Mil. Diseases (A871)
- Combat Casualty Treatment Technology (627724)
 - Military Research Animal Resources (A812)
 - Combat Casualty Treatment Technology (A874)
 - Medical Systems in Nonconventional Warfare (A875)
- Systems Health Prevention Technology (62777A)
 - Health Hazards of Mil. Materiel (A878)
 - Medical Factors Limiting (A879)
- Repellents
 - New Candidates
 - Louse Toxicant (Pediculicide)
 - Abate (0,0,0',01-Tetramethyl-o-o'-thio-di-p-phenylene phosphorothioate) (AFPCB)
 - Standards Determination
 - Teratogenic Effects
 - Pregnant Rabbits
 - Dermally
 - Orally
 - Carbon 14 Studies
 - New Drug Application Program
 - Rabbits
 - Rats
 - Dogs
 - Malathion
- Commercially-Available
- Reformulations
- New Polymer Formulations
- Controlled-Release Additives
- Insecticide
 - Propellant
 - Pyrethroil (AFPCB)
 - DEET Acute Inhalation
 - Subchronic Inhalation
 - Behavioral
- Diethyl Metatoluamide (AFPCB)
 - Chronic
- 3-(phenoxyphenyl) methyl (±)-cis, trans-3-(2,2-dichloroethenyl)-2,2-dimethylcyclo-propane carboxylate (Permethrin) (AFPCB)
- (5-Benzyl-3-furyl)Methyl-2,2-Dimethyl-3-(2-Methylpropenyl) Cyclo panecarboxylate (Resmethrin) (AFPCB)
- Toxicological Hazards/ARHA

Medical/Dental Device

- Medical Devices
 - Combat Maxillofacial Injury and Materials (62775A)
 - Protective Devices
 - Moldable Polymeric Material

Level 9 - continued

- Spray-on Bandages (biodegradable, biocompatible, with nemostasis, antiseptis, anesthesia properties)
- Artificial Skin and Contouring Material
- Esophageal/Tracheal Transplant Materials
- Microencapsulated Antibiotics
- Permanent Implants
 - Various Vascular Grafts
 - Orthopaedic Implants
 - Implants for Cosmetic Reconstruction
 - Artificial Organs
 - Heart Valves
- Implants in Contact with Mucosal Tissue
 - Artificial Eyes
 - Dentures
 - Intrauterine Devices
 - Certain Types of Catheters
- Corrective, Protective and Supportive Devices
 - Splints
 - Braces
 - Films
 - Protective Clothing
- Collection and Administration Devices
 - Blood Transfusion Sets
 - Various Types of Catheters
 - Dialysis Units
 - Hypodermic Devices
 - Other Injection Devices
- Storage Devices
 - Bags or Other Containers for Blood
 - Blood Products
 - Diagnostic Agents
- Dental Devices
 - Dental Diseases
 - Dental Materiels
 - Biocompatible Tooth Implants
 - Artificial Bone Implant Materials
 - Beryllium Castings
 - Beryllium Grindings
- Chemical Warfare (Defense)
 - Prophylaxis Drugs
 - Defense System CW/BW Research (61102A)
 - Chemical/Biological Defense Investigations (62706A)
 - Medical Defense Against Chemical Weapons (62734A)
- Basic Toxicology Research
 - Extrapolation of Data
 - Interspecies (From Animal to Man)
 - Intraspecies (Man to Man Incorporating Population Considerations)
 - Low to High Concentrations

continued-

Level 9 - continued

Other

- Chemicals Used to Extend Life to Whole Blood for Transfusions
- Blood Replacements
- Anesthetics
 - Operating Room
 - Dental Clinic
- Human Factors Engineering in System Developments (62716A)
- Human Factors Training and Operating Effects (63739A)
- Military/Industrial Environments
 - Operational Pollutants
 - Training Exercises
 - Pollution Abatement Process Technology Research (61102A)
 - Installation Effluents
 - Army Posts
 - Military Environmental Criteria Development (62704A)
 - Environmental Quality Technology (62720A)
 - Army Ammunition Plant (MBRDL)
 - TNT Wastewaters Toxicity
 - Pink Water
 - Condensate Water
 - RDX L 1,3,5 Trinitrohexahydro-1,3,5-Triazine)
 - 2,4-DNT
 - TNT (Trinitrotoluene)
 - Inhalation
 - Oral
 - DCPD (Dicyclopentadiene)
 - DIM P (Di isopropyl methyl phosphonate)
 - Identification of Health Effects of Mil. Pollutants (A835)
 - Environmental Quality of Construction and Operation (A896)
 - Environmental Quality R&D (D048)
 - TRADOC Studies & Analyses (65102A)
 - TRADOC Studies & Analyses (M980)
 - Support of Development Testing (65702A)
 - Test Design & Evaluation (D026)
 - Field Smoke Assessment (D204)
 - Aircraft Development Test Activity (D618)
 - Matériel Systems Analysis (65706A)
 - US Army Matériel Systems Analysis (M541)
 - Exploitation of Foreign Items (65709A)
 - Exploitation of Foreign Items (D650)
 - Support of Operational Testing (65712A)
 - Test Boards (DV02)
 - Evaluation of Matériel Concepts (D985)
 - Foreign Weapons Evaluation (65714A)
 - Program-Wide Activities (65801A)
 - DOD Munitions Effectiveness/Explosive Safety Standards (65805A)
 - DOD Munitions Effectiveness (D620)
 - Explosive Safety Standards (M857)

continued-

Level 9 - continued

Other Support Equipment

Combat Support Equipment (63726A)

General Support Equipment (DK39)

Combat Support Equipment

Tactical Bridging

Shop Sets

Construction Equipment

Floating & Rail Equipment

Generators & Associated Equipment

Material Handling Equipment

Medical Support Equipment

Special Equipment

User Testing

Nonsystem Training Devices

Support Equipment Facilities

Military Policy

Riot Control Agents

Material

Military Inventory

Hazard to Military Personnel/AEHA

Tier 1, 2,

AI3-36323

AI3-36332

AI3-35765

AI3-36110

AI3-33019a

AI3-36317a

AI3-36383

AI3-36406

AI3-36423

AI3-36424

AI3-36436

AI3-36437

AI3-36439

AI3-36440

AI3-36466

AI3-36468

AI3-70735aGa

AI3-37128a

AI3-37129a

AI3-37134a

AI3-37136a

AI3-37137a

AI3-37138a

AI3-37139a

AI3-37406a

AI3-37407a

AI3-37408a

AI3-37409a

AI3-37410a

continued-

Level 9 - continued

AI3-37411a
AI3-37416a
AI3-36329a
AI3-37518
AI3-37520
AI3-37522
AI3-35765E
AI3-37413a
AI3-37421a
AI3-37423a
AI3-37424a
AI3-37425a
AI3-37427a
AI3-37432a
AI3-20827c
AI3-37435a
AI3-37436a
AI3-37437a
AI3-37439a
AI3-37440a
AI3-37441a
AI3-37442a
AI3-37444a
AI3-37446a
AI3-34960b
AI3-37528a

Topical Health Hazards (AEHA)

Dermal, Irritation, Rabbits

AI3-36526
AI3-36318b
AI3-34804
AI3-5974
AI3-31534a
AI3-33575b
AI3-12078
AI3-33514a
AI3-36414
AI3-8010
AI3-32840
AI3-36378
AI3-36327
AI3-36375
AI3-36415
AI3-36419
AI3-36422
AI3-36028
AI3-36374
AI3-35966
AI3-36543
AI3-36541aGa

continued-

Level 9 - continued

A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a
A13-37031a
A13-37034a
A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698a
A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Ocular, Irritation, Rabbits

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333

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Level 9 - continued

A13-37024a
A13-37025a
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A13-37223
A13-37226
A13-36465
A13-36388
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A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Photochemically Induced Dermal Irritation, Rabbits

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
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A13-36375
A13-36415
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A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a

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Level 9 - continued

A13-37026a
A13-37028a
A13-37031a
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A13-37036a
A13-37037a
A13-37038a
A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698a
A13-36696
A13-36699
A13-36401
A13-36697a
A13-16738
A13-37027a
A13-37029a
A13-37033a

Approximate Oral Toxicity, Rats

A13-36526
A13-36318b
A13-34804
A13-5974
A13-31534a
A13-33575b
A13-12078
A13-33514a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541aGa
A13-36331
A13-36333
A13-37024a
A13-37025a
A13-37026a
A13-37028a

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Level 9 - continued

A13-3703¹/_a
A13-3703_a
A13-3703_a
A13-3703_a
A13-3703_a
A13-37222
A13-37223
A13-37226
A13-36465
A13-36388
A13-36698_a
A13-36696
A13-36699
A13-36401
A13-36697_a
A13-16738
A13-37027_a
A13-37029_a
A13-37033_a

Dermal Sensitization, Guinea Pigs

A13-36526
A13-36318_b
A13-34804
A13-5974
A13-31534_a
A13-33575_b
A13-12078
A13-33514_a
A13-36414
A13-8010
A13-32840
A13-36378
A13-36327
A13-36375
A13-36415
A13-36419
A13-36422
A13-36028
A13-36374
A13-35966
A13-36543
A13-36541_aG_a
A13-36331
A13-36333
A13-37024_a
A13-37025_a
A13-37026_a
A13-37028_a
A13-37031_a
A13-37034_a

continued-

Level 9 - continued

A13-37036a	
A13-37037a	
A13-37038a	
A13-37222	
A13-37223	
A13-37226	
A13-36465	
A13-36388	
A13-36698a	
A13-36696	
A13-36699	
A13-36401	
A13-36697a	
A13-16738	
A13-37027a	
A13-37029a	
A13-37033a	
Toxicology Evaluations (Work Units) AEHA, 1978	
LD ₅₀ Rats and Rabbits	202
Approximate Lethal Dose - Acute - Rats and Rabbits	219
30-Day Alternate Feeding Study	30
Guinea Pig Sensitization Test	890
Rabbit Wear Test - 24-Day	67
Prenatal Toxicity - Adult Rat	295
Prenatal Toxicity - Rat Fetuses	2,572
Inhalation - Hazard Evaluation - Saturated Vapor	54
Inhalation Acute Short Term - Rat, Quail and Rabbit	263
Inhalation Subchronic	620
Literature Searches and Reviews	135
Prothrombin Time - Samples	98
Blood Gas Analysis	100
Rapid Avoidance - Rat	217
Enzyme Induction - Rat	604
Activity Drum, Rat	246
Physiological Measurements	80
Atmospheric Sample Collection	1,584
Photosensitization	139
Subchronic Ingestion	32
Shuttlebox Avoidance, Rodent	870
Long Term Activity Monitor, Rodent	300
Sidman Avoidance, Rodent	16
Passive Avoidance, Rodent	239
Air Blast Escape, Rodent	2
Swimming Endurance and Coordination, Rodent	12
Beam and Grid Balance and Coordination, Rodent	151
Photoirritation Skin Study	276
Counted Asbestos Fiber Samples	554
Total	10,867

continued-

Level 9 - continued

Pathology and Animal Care Work Units, AEHA, 1978

Primary Irritation Evaluation Skin -	
Rabbits	406
Primary Irritation Evaluation Eye - Rabbits	484
Necropsy	1,398
Histopathology - Tissues Processed	30,072
Histopathology - Tissues Evaluated	22,343
Complete Blood Counts	482
Differential Blood Counts	482
Coulter Counter Standards	308
Fecal Analysis	20
Urinalysis	311
Animals Weaned - Rats	5,906
Radioactive Treatment, Animals	64
Radioactive Sample Determinations	1,296
EM Tissues Processed	338
EM Thin Prep	180
EM Plates Processed	216
EM Prints Prepared	50
	<hr/>
	Total
	64,356
Others	
p-Chlorophenyl Methyl Sulfide	
p-Chlorophenyl Methyl Sulfoxide	
p-Chlorophenyl Methyl Sulfone	

NOTES

- a. It may be either CH-54 or CH-58, believe it's CH-58
- b. For air assault, air cavalry and aeromedical evacuation missions
- c. Being replaced by Patriot
- d. Could belong to one of the other two categories
- e. Including Pershing II due to be fielded in '83
- f. Being replaced by Viper
- g. M106A1, M125, and above all part of the M113 Series
- h. 2-man crew, 11-man infantry squad
- i. 5-man crew plus 5-man cavalry squad
- j. The IFV and CFV for the Fighting Vehicle System (FVS)
- k. 7-man crew
- l. Intended to replace the M113 and M114
- m. Handling, use combustion products/emissions vaporization as smoke munition
- n. Handling, use combustion products/emissions

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